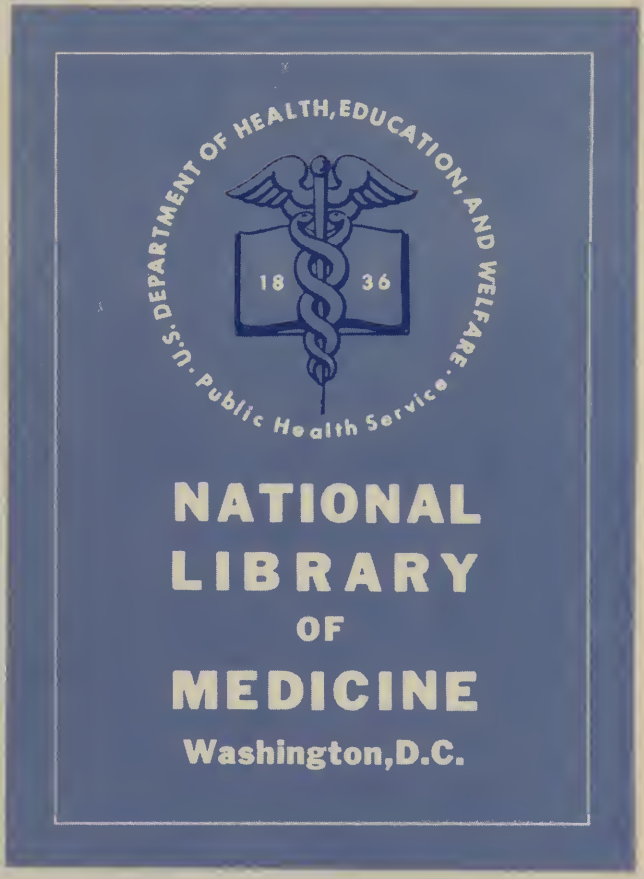

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122

A TREATISE

ON THE

DISEASES OF THE RESPIRATORY PASSAGES.

FOR THE USE OF

STUDENTS AND GENERAL PRACTITIONERS.

BY

CHARLES PORTER HART, M. D.,

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WITH NUMEROUS ILLUSTRATIONS.

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PREFACE.

The last few years have witnessed a marked change, amounting almost to a revolution, in the practice of medicine. Specialists have appropriated one branch after another, until, at the present time, not only the eye and ear, but the nervous system, the heart, the lungs, the respiratory passages, the reproductive organs, the kidneys, and, in fact, almost every important organ of the body, has been appropiated by them, by virtue of the superior knowledge acquired by the special study of, and devotion to, each particular branch or organ. The consequence is, so many of our physicians are becoming specialists, that, except in the country, a "general" practitioner, in the true sense of the word, is hardly to be found. To keep pace with this change, which is mainly the result of recent advances in the science of medicine, corresponding changes are needed in our works on practice. No single work, however voluminous, will suffice to contain all that is now required. To meet this exigency, encyclopœdias, made up of separate treatises, have been published; but such works are too expensive for the majority of country practitioners, who, knowing their own individual wants, prefer to supplement their knowledge by information to be obtained from special treatises on such subjects as chiefly engage their attention.

The author of the present work, recognizing the *desideratum* above referred to, has published during the last few years various brief treatises on special branches of practice; and he is truly grateful for the very liberal patronage which a generous profession has

bestowed upon them. With a similar object in view, he has prepared the present manual on diseases of the respiratory passages, which he hopes will not only be found to be of equal value with its predecessors, but to meet the requirements of those for whose convenience it has been specially designed.

As will be seen, the chief aim of the author has been to render the work practical, rather than scientific. Hence he has introduced under each head a great number and variety of clinical cases, not only for the purpose of illustrating the treatment, but on account of the many practical hints which they contain. In selecting them the utmost liberality has been exercised, the only criterion being that of general utility.

Much credit is due the publisher for the very liberal manner in which he has illustrated the work. The engravings, not one of which has been added for mere ornament, will no doubt greatly enhance its usefulness as a guide to the general practitioner.

Finally, it would have been an easy matter to have greatly increased the size of the volume, but this the author has carefully refrained from doing, believing that in its present compendious form it will probably prove more acceptable to students, as well as more useful to busy practitioners. C. P. H.

Wyoming, Ohio, March, 1882.

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PLATE I

FIG. I.

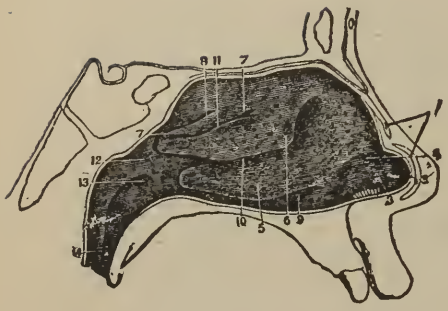


FIG. II.



FIG. III.

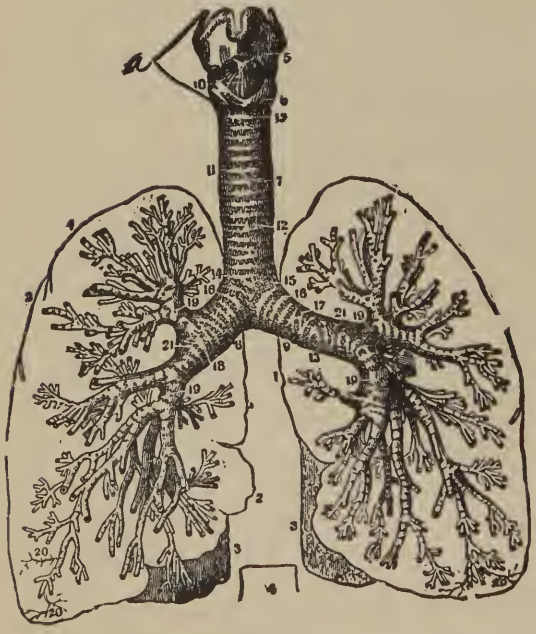


FIG. IV.

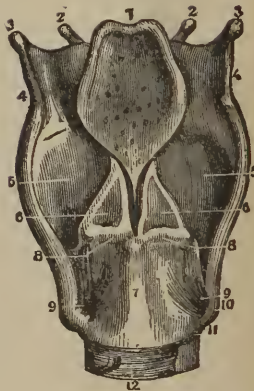


FIG. V.



DISEASES OF THE AIR-PASSAGES.

INTRODUCTION.

The term *Air-passages* is generally limited in its signification to that portion of the respiratory tract known as the larynx, trachea and bronchial tubes—in other words, to the trunk and branches of the "bronchial tree"—but we shall find it more useful, both in a pathological and therapeutic sense, to include under this head, in addition to those above referred to, all the cavities and passages subservient to the respiratory function except the pulmonic, especially the nasal fossæ and their communicating sinuses.

Doubtless most of our readers are sufficiently acquainted with the general anatomy of these parts; nevertheless, it will not be out of place, before proceeding to describe the special diseases of the respiratory passages, to refresh the memory by means of the following brief outline of the

ANATOMY OF THE AIR-PASSAGES.

The *nasal fossæ* (Pl. I., Fig. 1) are two large, irregular cavities, situated immediately below the anterior portion of the cranium, between the orbits, and lined by the *pituitary*, or *Schneiderian* membrane. They are separated from each other by the *septum nasi*, which is formed chiefly by the *vomer* (Fig. II, 11), the *nasal plate* of the ethmoid bone, (Fig. II, 6), the *azygos process* of the sphenoid, and the *mesial spines* of the superior maxillary and palate bones.

The external lateral wall of each naris (Fig. I) is deeply grooved by three *fossæ*, or *meatuses*, the *superior* (11), *middle* (10), and *inferior* (9). These passages run from before backwards, being situated between the *spongy bones* (7, 6, 5) bearing similar names. Into the superior meatus the *posterior ethmoid cells* (Fig. II, 8) and the *sphenoidal sinus* open. Into the middle meatus, the largest of the three, the *antrum maxillary*, or *antrum Highmorianum* (14), opens by a passage which, in the recent state, is nearly closed by a small fold of the mucous

membrane surrounding it. In front of this opening is a groove, leading from the frontal sinus, called the infundibulum, into which the *anterior ethmoid cells* open. In the inferior meatus, on a level with the inferior spongy bone, is the opening of the *Eustachian tube* (Fig. I, 13), and in front of this opening, at the junction of the anterior with the middle third of the meatus, is the opening of the *nasal duct.* Each naris opens posteriorly into the upper part of the pharynx, and is separated from its fellow by the posterior free edge of the vomer.

The *Schneiderian membrane* (Fig. I), which lines the nasal fossæ and the various sinuses communicating with them, is highly sensitive and vascular. It consists of two layers, a fibrous, or periosteal layer, —the perichondrium of the nasal passages—and a mucous layer, or membrane, which is continuous with the mucous membrane of the pharynx and Eustachian tubes. The *nerves* which supply the nasal cavities are the olfactory, the internal nasal branch of the ophthalmic, and branches from Meckel's ganglia. The *arterial* supply is derived from branches of the ophthalmic and internal maxillary arteries.

The *larynx* (Fig. III, *a*) is situated at the top of the *trachea* (7), into which it opens, at the anterior, superior part of the neck. It is composed of four cartilages, the *thyroid* (Fig. III, 5), the *cricoid* (6), and two *arytenoid* (Fig. IV, 6). The thyroid, or largest cartilage, presents anteriorly, and forms the prominent angle in the neck called *pomum Adami.* The cricoid cartilage is next in size, and forms a ring, the anterior portion of which is narrow and the posterior deep; its superior edge is connected anteriorly to the thyroid cartilage by the *crico-thyroid ligament* (Fig. III, 10), and posteriorly it supports the arytenoid cartilages; its inferior edge is joined to the first ring of the trachea (13). The arytenoid cartilages are the smallest, are of triangular form, and move upon the cricoid; the apex of each is connected to the *epiglottis* (Fig. IV, 1) by a fold of mucous membrane called the *aryteno-epiglottidian fold.* The epiglottis is a fibro-cartilage, somewhat oval in form, connected inferiorly by a narrow, stalk-like process to the angle of the thyroid cartilage; it is attached anteriorly by cellular tissue and mucous membrane to the os hyoides, and to the base of the tongue by three folds of mucous membrane, the central one of which is called the *frænum epiglottidis;* posteriorly it is connected to the

arytenoid cartilages by the aryteno-epiglottidian folds, which folds form the sides of the glottis.

The *glottis* (Fig. V, 9), or superior opening of the larynx, is situated immediately behind the base of the tongue and epiglottis, and is triangular in form, the base being anterior. The *rima glottidis*, situated about three-fourths of an inch below the glottis, resembles a triangular slit, the base of which is formed by the bases of the arytenoid cartilages, and by the upper and posterior edge of the cricoid cartilage, and the sides are formed by four ligaments, two on each side, called the *thyreo-arytenoid*, or *chordæ vocales* (Fig. V, 6); these ligaments arise from the base of each arytenoid (5), converge as they pass forward, and are inserted into the angle of the thyroid (1); the inferior ligaments are tendinous and horizontal, the superior membranous and semilunar; between them, on either side, is a small oval fossa, called the *ventricle* of the larynx.

The *muscles* of the larynx, the names of which are, for the most part, sufficiently descriptive of their location, are the *thyro-hyoideus*, the *crico-thyroideus*, the *thyro-arytenoideus lateralis*, the *crico-arytenoideus posticus*, and the *arytenoideus*, the last of which fills the space between the arytenoid cartilages.

The *arteries* which supply the larynx are the *superior thyroid*, derived from the external carotid, and the *inferior thyroid*, which is a branch of the subclavian. There are four laryngeal *nerves*, two on each side, a *superior* and *inferior* pair, both of which are derived from the pneumo-gastric; the superior laryngeal nerve arises near the base of the cranium, and is chiefly distributed to the glands and membrane of the larynx; the inferior laryngeal nerve arises on the left side in the thorax, and on the right side at the lower part of the neck, and is principally distributed to the muscles, particularly the posterior and lateral crico-arytenoid and the thyro-arytenoid muscles. Several branches of the superior nerve are distributed to the epiglottis, and a large branch is sent to the arytenoid muscle; also a small filament to the crico-thyroid muscle. It will thus be seen that the inferior laryngeal nerve is distributed to the dilating muscles of the larynx, while the superior is distributed to the muscles which close the glottis, and to the lining membrane, which is extremely sensitive to irritation.

The *trachea* (Fig. III, 7) is a cylindrical, fibro-cartilaginous and membranous tube, extending from the inferior part of the larynx to the level of the third dorsal vertebra, where it divides into two branches, the *bronchi* (8, 9). It is composed of cartilaginous rings, incomplete posteriorly, situated one above the other, with an elastic substance between them, and firmly united by a fibrous membrane, which also encloses the cartilages. Its posterior surface is composed of transverse muscular fibres, which are not very distinct. It is lined by a mucous membrane containing numerous mucous follicles, which is continuous with that of the larynx. The tracheal *vessels* are derived from the superior and inferior thyroidal arteries; and the *nerves* are given off by the pneumo-gastric and the cervical ganglia.

The *bronchi* (Fig. III, 8, 9) are two branches of the trachea, into which the latter divides opposite the third dorsal vertebra. The *right bronchus* (8) is larger and shorter than the left, and runs transversely into the root of the right lung, where it divides into three branches; the *left bronchus* passes through the aortic arch to the root of the left lung, where it divides into two branches. These tubes are composed of the same structures as the trachea, but as they advance into the substance of the lung, the cartilaginous rings gradually diminish in size, firmness and regularity, until their place is supplied by fibrous tissue, which tissue finally disappears, and nothing remains but mucous membrane, which terminates in the pulmonary cells. The *bronchial arteries* are two or three in number; they arise from the thoracic aorta, and are distributed to the bronchi and their ramifications; the *bronchial nerves* are supplied by the two pulmonary plexuses, formed from the pulmonary branches of the pneumogastric.

EXPLORATION OF THE AIR-PASSAGES.

The last two decades have witnessed a wonderful revolution in the diagnosis and treatment of diseases of the larynx and neighboring parts, in consequence of the discovery of new and greatly improved methods of exploration. Previous to this, the great obstacle to the successful investigation and comprehension of these diseases, arose from the fact that the interior of the larynx and posterior nares are so situated as to be outside of, and almost directly opposite to, the direct line of vision. It is true that experiments, more or less suc-

cessful, had been made long before, especially by Senn, of Switzerland, in 1827, by Belloc and Baumes, of France, in 1837 and '38, and by Liston, of England, in 1840; but their efforts to devise a suitable instrument for the practical exploration of these passages, though they paved the way for the more successful labors of T rck, Garcia and Czermak, unlike the latter, lacked the one essential necessary to the practical application of the principle which has since been so fully and satisfactorily developed. Garcia, a famous Spanish singing master, whose observations were first published in the *Royal Philosophical Magazine and Journal of Science* for 1855, was the first to record, from actual observation, the physiological action of the vocal ligaments and larynx in the production of sound. As the principle upon which his observations were made is the same as that of the *laryngoscope*, it will be interesting as well as instructive to note his method of making them. It was simply that of standing with his back to the sun, and receiving the rays upon a looking glass so held as to reflect them through his opened mouth into the *fauces;* he then introduced a small dentist's mirror into the back of the mouth, so as to receive the reflected rays of the looking glass, and by a second reflection direct them upon the larynx below, which thereby became illuminated, and was rendered visible in the dentist's mirror.

At the same time that these observations were made by the famous Spanish *maestro*, Profs. Türck, of Vienna, and Czermak, of the University of Krakau, were experimenting with *laryngeal mirrors* (Pl. III.) with a view to the improvement of laryngoscopic investigations in the diagnosis and treatment of laryngeal and other throat diseases. Prof. Czermak, by making use of a powerful artificial light in place of the sun's rays, greatly advanced the discovery by rendering the observer independent of the sun's light, thus enabling him to make examinations by night as well as by day.

THE LARYNGOSCOPE.

By the *laryngoscope* (Pl. II.) we are to understand, then, simply an instrument so constructed as, in the first place, to illuminate the *fauces*, by throwing light from any source, natural or artificial, into the oral cavity, and afterwards illuminating the larynx, by turning the illuminating rays in the requisite direction by means of a little laryn-

PLATE II.

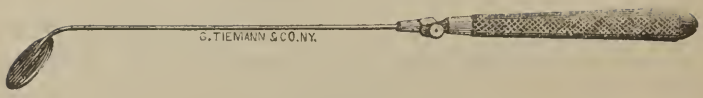


FIG. 1.

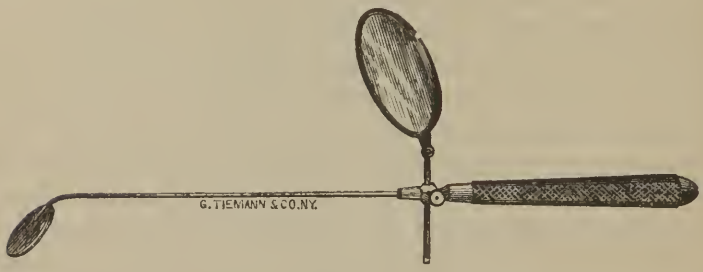


FIG. 2.

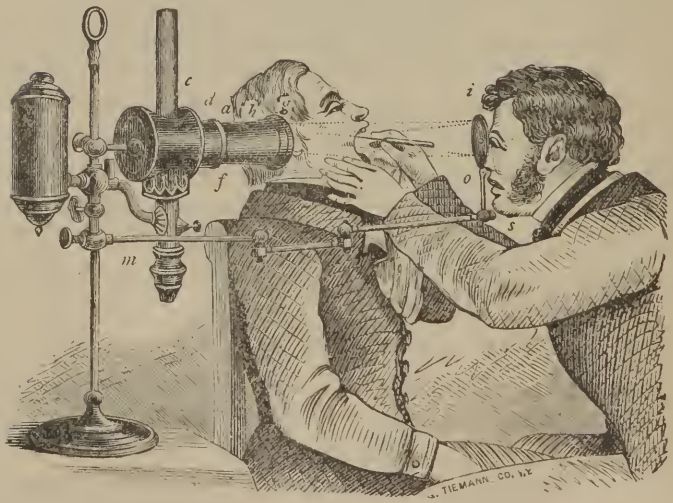


FIG. 3.

geal mirror introduced into the back part of the mouth. It is thus seen that, with the fauces well illuminated, the little laryngeal mirror introduced therein constitutes the laryngoscope, and is the only instrument necessary for simple laryngoscopy.

Tobold's laryngoscope, one of the most convenient and perfect instruments in use, is represented by Fig. 3, which also shows the position of both the patient and examiner. It consists of a common study-lamp, bearing a double-jointed bracket (*m*), to which is attached a large perforated reflector (*i*). At *o* is a *charniere* joint, which permits of the forward or backward motion of the reflector. The light, which in this instrument is obtained from oil, is condensed by means of convex lenses (*c*, *d*, *g*) contained in a brass tube (*a*). When in use, the lamp is placed on a stand, or other suitable support, to the left of the patient, and at such a height that when the rays of light are concentrated upon the mirror, the latter, properly adjusted, will reflect them into the mouth of the patient. The fauces being thus illuminated, the observer, by means of one of the laryngeal mirrors (Pl. III., Figs. 3, 4, 5), held against the uvula and soft palate, is enabled to so deflect the rays of light as to throw them down into the larynx. The examination is greatly facilitated, in most cases, by the patient depressing his tongue by means of Türck's (Fig. 1) or some other suitable tongue depressor, or what is generally better, by protruding his tongue as far as possible, and then holding it out by taking hold of its tip with the thumb and index finger of his right hand, covered by a handkerchief, and with the thumb resting against the chin. The laryngeal mirror is first warmed, in order to keep its surface clear of the film of moisture which would otherwise condense upon it, the temperature being readily estimated by bringing its back into contact with the examiner's hand or cheek. It is then passed carefully over the tongue until it reaches the uvula, when, if the parts are kept well illuminated by means of the reflector, on depressing the handle a little, the epiglottis will be brought into view; and by getting the patient to inflate his lungs, say *ah*, *ah*, *ah*, or laugh heartily, by very slightly moving the handle of the mirror, the observer will be enabled to inspect the various parts of the larynx, and even to see through it into the trachea. In this manner any abnormal appearances can be de-

PLATE III.

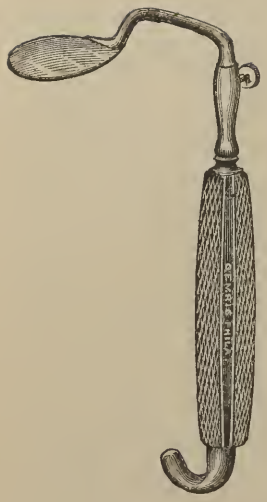


FIG. I.



FIG. II.



FIG. III.



FIG. IV.



FIG. V.

tected as readily as though they were situated externally. Of course, as practice alone makes perfect, frequent manipulation is required in order to reach perfection in the use of the instrument; but so easy and simple is the process, that, as Elsberg has well remarked, "the performance of laryngoscopy is generally as easy as, if not more easy than, the performance of any one of the methods of physical examination which a physician would be ashamed not to have mastered, at least to some extent," such as percussion and auscultation.

But it is seldom necessary, except in important operations, to make use of the large and expensive apparatus above described. As the laryngeal mirror is the only essential part of the instrument, Elsberg has devised what he calls a "pocket laryngoscope," consisting of a small throat mirror, to the handle of which is attached a reflector, not pierced in the center, but movable in all directions. This instrument is so well illustrated in Pl. II. Fig. 2, as to need no further description. The reflector is readily manipulated by means of the index finger, the distal phalanx of which works in a ring-shaped handle attached to its back. This instrument is well adapted to the purposes for which it is intended, and is the only one that the general practitioner will be likely to need.

A still simpler arrangement of the mirror is seen in Pl. III. Fig. 2. This is nothing more than a common round reflector, attached to the forehead of the observer by means of an elastic band passing around the head. This arrangement, while it leaves the vision clear, as in the instrument last described—the operator not being required to look through a small opening in the reflector, as in Tobold's apparatus—yet, as the attention requires to be constantly fixed upon the position of the head in order to thoroughly illuminate the fauces, the larger instrument is much to be preferred, especially for important operations.

THE RHINOSCOPE.

The only difference between the laryngoscopic and rhinoscopic apparatus is in the relative dimensions of the throat mirrors, the rhinoscopic mirror being of a smaller size than the laryngoscopic. The mirror is attached to the stem at about the same angle in both cases, 120°—135°, but the rhinoscopic mirror is only about one-fourth the

ordinary size of the laryngoscopic mirror, or about the dimensions of a silver three-cent piece. Its use, as the name indicates, is to enable us to inspect the posterior nares and the superior portion, or vault, of the pharynx. It also enables us to examine the nasal orifices of the Eustachian tube. Owing to the small size of the mirror and the mobility and unruliness of the uvula, rhinoscopic examinations are much more difficult to make than laryngoscopic, and considerable experience in manipulating the mirror, is generally necessary in order to acquire the requisite dexterity for its successful application to the diagnosis of diseases of the nose and pharynx.

DISEASES OF THE AIR-PASSAGES.

CHAPTER I.

AFFECTIONS OF THE NASAL CAVITIES.

The nose is not only an organ of special sense, but its anatomical relations are such as to constitute it an important portion of the respiratory tract. Its diseases, therefore, although generally regarded as trivial affections, may be considered as having special claims upon our attention, as introductory to diseases of the respiratory passages, since disorders of the pulmonary system frequently originate in this portion of the air-passages.

1.—BLEEDING FROM THE NOSE.

EPISTAXIS; NASAL HEMORRHAGE.

Hemorrhage from the nostrils is of very frequent occurrence in children and young people, particularly in girls just previous to the establishment of the menstrual function. It may be either of an active or passive character, and usually depends on congestion of the mucous membrane.

Symptoms.—When of an active character, the hemorrhage is frequently preceded by one or more of the following symptoms; headache, vertigo, tinnitus aurium, and other signs of cerebral hyperæmia; sense of weight and tension in the forehead; and a feeling of heat and fullness in the nares; there may also be more or less redness of the face and eyes, coldness of the extremities, and even rigor, but this symptom is not common. Generally, the bleeding is preceded or accompanied only by a sense of fullness and pressure in the head and nostrils; sometimes, indeed, the hemorrhage occurs without any premonitory symptoms. The bleeding may take place

from one nostril or from both; may issue drop by drop, or in a continuous stream; may flow only from the anterior nares, or from both the anterior and posterior nasal passages; may be swallowed, or issue from the mouth; may pass into the glottis and excite coughing, or may accumulate in the stomach until it causes nausea and vomiting; finally, the quantity may be so small as to be insignificant, or so great as to endanger life.

Diagnosis.—When the blood flows from the anterior nares, there is little difficulty in determining its source; but when, as in sleep, it takes a backward direction, and is afterwards ejected from the stomach, there may be some obscurity about it. If cough exists, or is excited by it, it may be mistaken for hæmoptysis; and in the absence of cough, for hæmatemesis. A careful examination, however, will in most cases establish a correct diagnosis. Thus, if on blowing the nose the blood is fresh, uncoagulated, and unmixed with either gastric or bronchial secretion, it may be confidently referred to epistaxis.

Prognosis.—It is very seldom that the hemorrhage is so great as to justify any alarm, although, if very copious, its occurrence at short intervals may so reduce the powers of the system, as to lay the foundation for serious constitutional disorders. When excessive, it is generally associated with a hemorrhagic diathesis, or with a prostrate condition of the system, from the beginning, thus adding to the mischief by producing still greater debility. In these cases the hemorrhage is strictly of a passive character, and is sometimes fatal, though in most instances of the kind, the result is attributable to the pre-existing disease rather than to the hemorrhage.

Etiology.—The predisposing causes are:—A hemorrhagic state of the constitution; a plethoric condition of the system; an excited state of the circulation; and an extremely tender or vascular condition of the Schneiderian membrane.

The chief exciting causes are injuries, the most trifling of which, if the predisposition is strong, may be sufficient to induce an attack. Thus a slight blow on the nose or head, a paroxysm of coughing or sneezing, stooping, picking the nostrils, severe mental or bodily exertion, anger, exposure of the head or person to undue heat, or any

other cause capable of exciting the circulation, or producing congestion of blood to the head, may each give rise to it. Other causes are: Apoplexy, old age, change of life, menstrual irregularities, hæmorrhoids, adynamic fevers, phthisis pulmonalis, scorbutus, scrofula, purpura, etc.

TREATMENT.—It is important, first of all, to discriminate between those cases in which the epistaxis is salutary and those in which it is not. When there is no congestion of blood to the head, no plethora of the system, no undue excitement of the circulation; when the hemorrhage is not vicarious to pulmonary or other dangerous discharges; in short, when there exist no constitutional symptoms which it is calculated to relieve, it is proper to suppress it. For this purpose the following remedies will be found most effective:

a. When caused by arterial excitement.—Acon., Bell., Gelsem., Verat. vir.

b. When arising from cerebral congestion.—Acon., Bell., Cham., Chin., Erig., Rhus.

c. From blows, falls, contusions, strains or physical exertion.—Arn., Bry., Rhus.

d. From exhaustion produced by debilitating losses.—Carbo veg., China, Sec. c.

e. From catamenial derangement.—Acon., Bry., Calc., Crocus, Podop., Puls., Sabina, Sep.

f. From a depraved state of the blood.—Calc., Ferr., Ham.,* Phos., Sep., Sil., Sulph.

g. From being over-heated, or stimulated with alcoholic liquors.—Acon., Bell., Bry., Ipec., Nux vom.

h. Spontaneously, or from very slight causes.—Calc., Carbo v., Millef., Sep., Sil., Sulph.

AUXILIARY TREATMENT.—Moderate epistaxis may generally be controlled by the following simple means: holding the hands above the head; applying pressure to the corresponding side of the lower jaw just above the bleeding nostril; apylying ice, snow or cold water to the nose, forehead or neck; holding the hands in either hot or cold water; or by sniffing up any simple astringent, such as a solution

*See *British Jour. of Hom.*, No. 92.

of Alumen. If necessary, the latter may be injected into the nostrils by means of a small syringe. Plugging the nares should not be resorted to except in extreme cases, since it is doubtful whether it would ever be required, (except in cases of injury), if sufficient attention were given to the constitutional condition and treatment. The following is Dr. Perry's method of applying the plug, which for efficiency and ease of application is a great improvement on former modes: "Roll up between the thumb and fingers a lock of cotton into a cylinder or little roll, an inch or an inch and a half in length; tie a strong tread to the middle of the roll; bring the two ends of the roll together, and then, opening the nasal orifice by pressing down with the end of the finger its lower margin, pass the middle or folded part of the roll (where the string is tied) into the nostril; next with the blunt end of a lead pencil or stick, press in the cotton roll slowly, along the floor of the nostril, an inch or more, and rest. If the blood passes down into the throat, you may be sure the bleeding spot is behind the roll, so push in your roll further and the blood will cease to pass behind. Then holding on to the string, pass some loose cotton into the nostril, and push it in, along with the pencil, down to the plug. The cotton will swell with the moisture, compress the bleeding surface, and arrest the hemorrhage. It is well to let the plug remain in for two or three days. The string attached to the cotton may be carried around the alæ nasi, to the side of the cheek, and fastened with a strip of adhesive plaster. In a day or two the mucus or natural secretions of the nasal surfaces will loosen the plug, and it may be easily removed by the string. The dry cotton will, in an ordinary case, answer for the plug. If you choose, you can wet it in liquor ferri persulphate, or cause the plug to be dusted over with pulv. ferri persulphate, or ferric alum, or tannic acid, or any other astringent that may be preferred."

Clinical Observations.—Dr. H. N. Guernsey gives the following differential diagnoses of remedies.

Arnica.—Injuries, fatigue, hot head and cool body.

Belladonna.—Hot blood, sensitiveness on being jarred, bounding pulse, congested eyes, throbbing carotids.

Calc. carb.—Persons of leucophlegmatic temperament.

Carbo. veg.—Desire to be fanned, hard condition of the skin, rigid fibre.

Chamomilla.—Spiteful and irritable temper, blood dark.

China.—Ringing in the ears, pulse irregular, flickering, imperceptible, cold and clammy skin.

Crocus.—Blood forming into long, dark strings.

Ferrum.—Red face, full pulse, very weak.

Ipecac.—Constant flow of bright red blood.

Mercurius—Epistaxis in light-haired persons, with lax skin and muscle.

Nitric acid.—Epistaxis in dark-haired persons, with tight fibre and muscle.

Phosphorus.—Tall, slim persons, with black hair.

Platina.—Patient feels *horrified* at what may happen.

Pulsatilla.—Flow intermits; tearful and gentle disposition.

Sepia.—Sensation of *weight* in the part from which the blood flows.

Sulphur.—Sensation of *heat* in the part from which the blood flows.

Ruddock prescribes:

Aconite.—Hemorrhage from *arterial excitement*, or from passion; also in the *plethoric*, or when there is a *full pulse.*

Belladonna.—Cerebral congestion; epistaxis preceded by *throbbing headache*, and fullness in the forehead and temples.

Carbo veg.—In aged persons with weakened constitution; or when the bleeding is profuse and persistent.

China.—In anæmic and weak persons; also, after the bleeding, when it has been excessive.

Ipecac.—Profuse and persistent flow.

Millefolium.—Arterial blood flowing without apparent cause, or *lacroms. Dark* blood; also, to eradicate predisposition from the upper part of the nose.

Phosphorus.—When accompanied with bruise-like marks (*ecchymosis*) on the body.

Nux vom.—Plethoric persons, especially where there is a tendency to congestion of liver, to piles, constipation and dyspepsia.

Arnica.—From a blow, fall, or physical exertion.

Hamamelis.—*Venous* hemorrhage, where the blood oozes or drops from the lining of the nose; epistaxis from the hemorrhagic diathesis; also, when the *degenerative changes* in the blood-vessels, as in old age, favor the discharge.

Podoph., or Puls.—When the hemorrhage is vicarious of the monthly period.

Bæhr recommends, where the symptoms of violent congestion of the head are present, *Belladonna*, *Aconite* and *Nux vomica*, particularly, to which Hempel adds *Gelseminum* and *Veratrum viride*. He also recommends *Bryonia alba* as being the best remedy for epistaxis at the commencement of a general acute disease; and adds that it is likewise useful in the bleedings depending upon strongly-marked venous hyperæmia of the brain, and belonging rather in the category of passive hemorrhages. If such bleedings set in without any other accessory symptoms or fever, he gives *Crocus* or *China*, the latter, more particularly, where distinct symptoms of anæmia were present previous to the hemorrhage. In the subsequent course of acute affections, with decomposition of the blood, he recommends *Arsenicum*, *Lachesis* and *Secale cornutum*. With reference to *Hamamelis*, he says he has never yet obtained the least result from its use.

Hale, in his "New Remedies," says of *Erecthites*: It is a specific for *epistaxis of bright red blood*. In *active* hemorrhages, attended by excitement of the circulation, we should be cautious and not prescribe too large doses, certainly not below the 3x. In *passive* hemorrhages, on the other hand, he says we will get the best results from the 1x or even from drop doses of the oil or mother tincture.

Hamamelis.—"We have found in the various journals," says Dr. Hale, "nearly a hundred cases of epistaxis, some of them of an alarming character, which were promptly arrested by the use of Hamamelis in some form." He also recommends *Erigeron* (which he says is a close analogue of Erecthites, and may be substituted for it in hemorrhages without much fear of failure) *Sanguinaria*, *Senecio*, *Thlaspi* and *Trillium*.

Hartmann relieved a most violent bleeding from the nose, in a case where there was anæmia from depletion, attended with spasmodic jactitation of the muscles, by *Moschus*.

Jahr recommends, when the epistaxis arises from congestion in the head, *Acon.*, *Bell.*, *China*, *Crocus*, *Conium*, or else, *Alum.*, *Cham.*, *Graph.*, *Rhus.*, etc.

If it occurs during coryza, *Ars.*, *Puls.*

In women in whom the catamenia are too feeble, *Puls.*, *Sec.*, *Sep.*

In those in whom they are too profuse, *Acon.*, *Calc.*, *Croc.*, *Sabin*, etc. With amenorrhœa, *Bry.*, *Puls.*, *Sep.*

In consequence of physical exertion, *Rhus.*, *Arn.*, or *Bry.*

In consequence of being over-heated, or of excessive indulgence in the use of stimulants. *Nux vom.*, or else, *Acon.*, *Bell.*, *Bry.*

To correct a tendency to bleed at the nose, *Calc.*, *Carbo veg.*, *Sep.*, *Sil.*, *Sulph.*

Dr. C. A. Moores says he has found *Arnica* a specific for cases having the characteristic of *bleeding on washing the face.* I have myself often found it to be an excellent remedy in cases where the epistaxis occurred without any apparent cause, or where it was increased by moving about, blowing the nose, talking, or by the least excitement.

Belladonna in *chronic* epistaxis.—Dr. T. G. Brown cured a case where the patient had been troubled with epistaxis almost daily as long as the patient could remember, with one dose of Bell. 200.

Kali brom., is recommemded by Dr. Geneuil in *L'Union Medicale.* He reports the case of a man in whom violent epistaxis had continued for six hours uncontrolled by styptics, when finally a saturated solution containing six grammes of the bromide of potassium was injected into the nose by means of a glass syringe; the hemorrhage was promptly arrested. Another case of a woman afflicted in the same way was speedily relieved by an injection of the same remedy twice. It is recommended that the bromide should also be given internally to prevent a recurrence of the hemorrhage. The power of promptly arresting the epistaxis is not due to the coldness of the solution of the salt, but to the contraction brought about in the blood vessels, and the consequent diminution of the flow of blood to the head.

2.—ACUTE INFLAMMATION OF THE NOSTRILS.

CORYZA, COLD IN THE HEAD.

Acute inflammation of the lining membrane of the nasal passages, though usually of but short duration, not only, as a general rule, causes much bodily discomfort to the patient, but, by extending in area and by continuity of tissue and surface to the neighboring cavities, frequently gives rise to complications of the most lasting and troublesome character. Thus the inflammatory action may extend upwards into the frontal sinuses, giving rise to severe headache; sideways into the Highmorian cavities, causing aching in the cheek bones, or through the Eustachian tubes to the tympanum or middle ear, causing aural catarrh and its consequences; or downwards into the larynx and bronchia, causing troublesome coughs, and sometimes leading to serious bronchial and pulmonary affections.

Symptoms.—The disease usually begins with slight febrile symptoms, such as chilliness, lassitude and headache, attended with a feeling of weight and tension about the forehead and root of the nose, red and watery eyes, and a sense of fullness and obstruction in one or both nostrils. These symptoms are accompanied, or succeeded, by more or less sneezing, titillation in the nerves and throat, and discharge of a thin, colorless fluid from the nasal passages. When the inflammation is of a higher grade, the febrile symptoms are more marked; the headache is severe, and attended with much pain and weight about the frontal sinuses (*gravedo*); the pulse is excited; the temperature of the skin is considerably elevated; the appetite is more or less impaired; and, with an unusual feeling of chilliness, there is in most cases a remarkable susceptibility to cold. The disease reaches its height in two or three days, and then, if the treatment is appropriate, or the constitution sufficiently vigorous, the symptoms soon subside; if not, the case is either protracted by a succession of fresh colds, or the weakness of the system is such as to cause it to assume the form of chronic catarrh, succeeded it may be by bronchitis, pneumonia, or other more serious disease of the respiratory organs.

Etiology.—Coryza, like other forms of simple catarrh, usually arises from cold, which is most apt to produce it if the part of the body to which the cold is applied is in a state of perspiration. Hence,

sudden transitions from heat to cold, exposure to currents of cold air, wet or insufficient clothing, damp beds, sitting on the damp ground, etc., frequently give rise to the complaint, especially after exertion, or when the vital powers are depressed from fatigue, disease, or constitutional debility.

TREATMENT.—When taken at the very commencement, *Camphor tincture*, in drop doses, every few minutes, will frequently cut short the disorder in the first stage. It may be conveniently administered on sugar; but it should be remembered that it will be of but little avail except in the incipiency of the disease. It is in this precursory stage, also, that *Nux vomica* is most effective, frequently relieving the troublesome affection as if by magic. *Aconite* and *Gelseminum*, used low, are likewise very efficient remedies in the first stage of the disease, especially when there is a decidedly feverish state of the system. If these remedies fail to arrest the complaint, and it passes into the second stage, attended with red and watery eyes, and an acrid, burning discharge from the nostrils, then *Arsen. iodat.* 3 x trit. will be found a sovereign remedy; or if, from any cause, the disease is likely to be particularly obstinate, and especially if the patient is subject to frequent attacks, the "*dry treatment*" of Dr. Williams may be employed. This consists simply in "total abstinence" from all liquids, thus "starving out" the disease by "cutting off the supply." This will generally be found to be a very efficient method of shortening the complaint, while it has the advantage of not interfering with other appropriate treatment.

THERAPEUTIC INDICATIONS.—*Aconitum* is eminently homœopathic to the symptoms during the first stage, and while a feverish state of the system exists. It may often be advantageously alternated with Belladonna, or some other indicated remedy.

Arsenicum.—This remedy is indicated when there is a copious discharge of thin, hot, acrimonious fluid from the nostrils, accompanied with red and watery eyes, obstruction of the nose, and burning heat of the eyes, nose and throat; also when attended with prostration and general debility.

Belladonna.—Severe headache, with a sense of fullness, heat and pressure in the frontal sinuses; also when there is stoppage or fluent coryza of the nose, redness and burning of the eyes, and diminished, increased, or perverted smell.

Chamomilla.—Chilliness and great sensibility to cold; dull, oppressive headache; feverishness with thirst; obstruction of, or coryzal discharge from the nose.

This remedy is particularly adapted to the complaint as it occurs in infants and young children.

Dulcamara.—Fever, accompanied with dull headache, sneezing, chilliness and lassitude.

This medicine is indicated when the complaint is aggravated by atmospheric changes, or when the patient is very susceptible to impressions from cold or damp.

Euphrasia.—Profuse discharge of acrid mucus, with frequent sneezing, and excoriation of the nostrils; also, redness and smarting of the eyes, with lachrymation.

Gelseminum.—Fever, dull headache, sneezing, tingling and smarting in the nose, with watery or mucous discharge from the nostrils; also inflammation and suffusion of the eyes, soreness of the throat, and cough.

This remedy appears to suit every stage of the complaint; and is especially applicable to cases attended with high febrile excitement, and pain, soreness, and stiffness in the limbs and muscles.

Hepar sulph.—Coryza, with frequent sneezing, painful inflammatory swelling of the nose, chillness and fever, headache, loss of smell, redness and smarting of the eyes and throat.

Hepar is an excellent remedy after Mercurius, especially if the disease is attended with cough.

Lachesis.—Heavy aching pains in the head, extending to the nose; coryza, with soreness of the nose, eyes and throat, lassitude, and dispositon to perspire.

This remedy is particularly useful in rheumatic, syphilitic, and obstinate cases; also after the abuse of Mercury, or when there is great constitutional weakness.

Mercurius.—Redness and soreness of the nose, eyes and throat, frequent sneezing, profuse mucus discharge from the nostrils, and perspiration.

This is one of our best remedies for coryza, especially when it occurs in an epidemic form. It may often be advantageously alternated with

Nux vom.—Fluent coryza in the day time and dryness of the nasal passages at night; dull, heavy headache, stoppage of one or both nostrils, frequent sneezing, and soreness and burning dryness of the eyes, nose and throat.

Nux is a valuable remedy in coryza, especially for the precursory symptoms.

Pulsatilla.—Thick fœtid yellowish or greenish discharge from the nasal passages, sometimes mixed with blood, and accompanied with heaviness and confusion of the head, chilliness, sneezing, loss of smell and taste; aggravation of the symptoms towards evening or in a warm room.

This remedy is indicated more particularly in the last stage; it is most serviceable in cold phlegmatic temperaments, in obstinate cases, and in infants that are unable to nurse in consequence of nasal obstruction.

Clinical Observations.—Bæhr, who regards catarrh of the nasal mucous membrane as of very little inherent importance, says the symptoms during the first twenty-four hours generally demand *Aconite.* This agrees with the experience of nearly every author on the subject. Thus, Dr. C. D. Crank says of *Aconite*, "This remedy will often relieve if taken in time. Indications: After exposure to cool winds; chilly, violent sneezing, coryza, swelling of upper lip, pain in head, pricking in throat, short dry cough. After the trouble has passed into the second stage, after the secretions become acrid and thick, this remedy has been of but little service to me."

Ruddock gives us the following indications:

Aconitum.—Commencement of a cold, or in the precursory stages of diseases resulting from a cold, with *feverishness.* If promptly administered, it often obviates the necessity for any other medicine. A dose every second or third hour. If the cold have advanced into any other disease, *Aconite* may be alternated with, or substituted by, another remedy.

Camphor.—This remedy is suited to the *chill,* or cold stage, when its prompt administration, in two-drop doses, repeated several times, every ten or twenty minutes, will often terminate the disease in the first stage. It should be chosen in preference to *Aconite* when the patient has still to be exposed to atmospheric changes. It is of little or no use except in the *incipient* stage.

Gelseminum.—Incipient, confirmed, and declining catarrh, with watery discharge from the nose, soreness in the throat and chest, cough and hoarseness.

Arsenicum.—Abundant discharge of *thin, hot, excoriating mucus* from the nostrils, with *burning sensations*; flow of tears; affection of eyes, nose, larynx, and trachea; lassitude and *prostration.*

Pulsatilla.—Impaired taste and smell; fœtid discharge from the nose; heaviness and confusion in the head; aggravation of the symptoms in the evening or in a warm room; sharp pains in the ears and sides of the head, frequently changing from one place to another.

Mercurius.—Constant *sneezing*, with soreness of the nose; thick mucus discharge; alternate heat and shivering; *profuse perspiration; sore throat; conjunctival* inflammation; aggravation of the symptoms towards evening. It is often useful in alternation with *Nux vomica.* When there is dull headache on waking in the morning, and great accumulation of mucus in the posterior nares, *Merc. iod.* is a suitable preparation. If *Merc.* fail, *Hepar sulph.* may be substituted.

Euphrasia.—Acrid fluent coryza, with involvement of the lining membrane of the eyelids, and *profuse lachrymation.*

Dr. Holland, of England, informs us that he has found a useful remedy in a teaspoonful of common table salt to a tumbler of water sniffed up the nostrils three or four times a day. I have found this remedy to be most useful in the sub-acute and chronic conditions.

Jahr recommends for the precursory symptoms of coryza (when the disorder is tardy in establishing itself), with catarrhal affection of the frontal sinus, eyes, etc., *Amm. carb.*, *Calc.*, *Lach.*, *Nux vom.*, *Sulph.*; or else: *Caust.*, *Hep.*, and *Nat. mur.*

For *dry coryza*, or *catarrhal obstruction of the nose*, the same remedies recommended for the precursory symptoms, recourse being had, in obstinate cases, to *Bry.*, *Igna.*, *Lyc.*, *Natr.*, *Nitr. ac.*, *Phos.*, *Plat.*, or *Sil.*

For *fluent coryza*, he recommends *Merc.*, *Puls.*, *Sulph*; or *Ars.*, *Bell.*, *Cham.*, *Dulc.*, *Hep.*, *Ipec.*, *Lyc.*, *Nitr. ac.*, and *Sil.*

Against a *disposition to take cold* on the slightest occasion; *Calc.*, *Graph.*, *Natr.*, *Puls.*, *Sil.*, and *Sulph.*

He also gives the following clinical indications: *Ammonium.*—

Obstruction of the nose, principally at night; swelling and painful sensibility of the nostrils; blowing of blood from the nose; *great dryness of the nose;* pain in the eyes, with lachrymation; bleeding of the nose; dryness of the mouth, especially at night.

Arsenicum.—Obstruction of the nose, and profuse *discharge of serous mucus at the same time,* with burning in the nose and *erosion of the adjacent parts;* sleeplessness at night; bleeding at the nose; hoarseness; humming in the ears; headache, with throbbing in the forehead, and nausea; *amelioration from heat;* adypsia, or desire to drink frequently, but little at a time.

Chamomilla.—Principally in the case of children, or after suppressed perspiration, and especially when there are: ulceration of the nostrils; cracked lips; somnolency, heaviness of the head, with a kind of stupidity; *shivering, with heat;* redness of one cheek, with paleness of the other; acrid and smarting mucus in the nose.

Dulcamara.—Obstruction of the nose, with discharge, which is checked by the least exposure to cold air; aggravation during repose, and amelioration by movement; bleeding at the nose; dryness of the mouth, without thirst; hoarseness and roughness of the voice.

Hepar.—In the majority of cases of *ordinary coryza,* in which *Merc.* appears to be indicated, but proves insufficient, or when the latter remedy has previously been taken to excess; especially when exposure to cold air renews the complaint, or causes headache, or when the coryza attacks only one nostril, and the headache is aggravated by movement.

Lachesis.—In cases in which *Merc.* or *Hep.* appear to be indicated, but prove insufficient, and especially when there are:—*Profuse discharge of serous mucus,* swelling and excoriation of the nostrils and lips, lachrymation, and frequent sneezing; or else when the catarrhal discharge is a long time in establishing itself, with obstruction of the nose, humming in the ears, lachrymation, headache, ill-humor, and complete unfitness for meditation; and especially if *Nux vom.* should have been employed with but partial success.

Mercurius.—In almost all cases of *ordinary coryza,* whether epidemic or not, especially when there are: frequent sneezing; *profuse discharge of serous mucus; swelling, redness, and excoriation of the nose,*

with itching and aching pains on pressing the nose; *offensive smell of nasal mucus;* pressive headache in the forehead; nocturnal perspiration, shivering, or feverish heat; violent thirst; pains in the limbs; aversion to solitude; aggravation of the state by both heat and cold.

Nux vomica.—Dry coryza, with *obstruction of the nose;* headache with *heaviness in the forehead,* or with shooting or tearing pains; heat of the face, especially in the evening, with burning redness of the cheeks; painful weariness of the whole body; quarrelsome and passionate humor; or when the coryza is fluent in the morning, but dry in the evening or at night, with dryness of the mouth, without much thirst; sensation of dryness in the chest; constipation or hard fæces; or else, *obstruction of the nose and discharge of* brown and corrosive *mucus at the same time,* which have withstood the exhibition of *Arsenicum.*

Ipecacuanha.—In cases in which *Arsen.* or *Nux vom.* have been indicated, but have proved insufficient, and especially when there are great weakness, anorexia, with nausea, disgust, and even vomiting.

Natrum.—When the coryza returns every second day, or when it is renewed by every current of air, and by the slightest chill, and yields only after perspiration.

Pulsatilla.—Anorexia; loss of taste and smell; *secretion of yellowish, greenish, thick, and offensive mucus;* swelling of the nose; frequent sneezing; photophobia; hoarseness; *heaviness* and confusion *of the head,* especially *in the evening, and in the warmth of a room, with obstruction of the nose;* amelioration in the open air; shivering, especially in the evening; adypsia; disposition to shed tears.

Hale says that "the catarrhal condition to which *Gels.* is homœopathic affects all the mucous surfaces, especially those of the eyes, nose and ears, and in the severest colds, when they affect all those organs, and the whole head suffers, there is no better remedy."

Dr. D. B. Morrow "cured a severe acute catarrh, with fluid coryza, headache, vertigo, cough, sticking pains in thorax, heaviness and trembling of the lower limbs, and pulse 110, with *Panthaurus* 3, in pellets; relief speedy."

Dr. Thomas Nichol, in his valuable paper on coryza, gives the following remedies and indications, with especial reference to the treatment of children:

Aconite is the best remedy for the incipient stage of coryza. The indications are, creeping chills followed by heat of the skin, with spasmodic sneezing and discharge of thin watery fluid from the nostril; the patient feels better in a cool room. One drop of tincture of Aconite in half a cup of water, a teaspoonful every one or two hours.

Camphor is another useful remedy in the incipient stage; Dr. Hughes considers it more generally useful than Aconite. "A few doses of it rapidly dissipate that chilly feeling which with most persons is the precursor of a cold in the head."

Sambucus is suitable for new-born infants; the nostrils are obstructed by a thick tenacious mucus, with sudden starting from sleep as if suffocating. It is the only remedy recommended by Hempel for this disease in children; it acts best in low dilutions.

Euphrasia has been too much neglected in this disease. It is indicated in coryza with excessive discharge of whitish mucus from the nostrils, with redness and soreness of the eyes and eyelids, and copious scalding lachrymation.

Mercurius is frequently given after Aconite, and is perhaps the most frequently indicated remedy in coryza. The symptoms are frequent sneezing, particularly when coming from the cool air into the warm room, profuse discharge from the nostrils, with redness, swelling and excoriation of the lips, fetid smell of the nasal mucus, fever with thirst, profuse perspiration at night which does not relieve; the symptoms are aggravated by warmth and cold. Concerning the preparation of Mercurius to be administered: Dr. Teste lays down "that corrosive sublimate is indicated in an immense majority of the cases which have been considered until now, as belonging to the sphere of soluble Mercury; provided, that, with a few exceptions, corrosive sublimate is given exclusively in the diseases of males, and soluble Mercury in the diseases of females." Experience has amply confirmed this statement, and yet Merc. sol. acts well with children of either sex. Merc. corr. deserves the preference in coryza when the sneezing is excessive.

Nux vomica has been much recommended for coryza, though Dr. Hempel remarks "we have never been so fortunate as to effect

anything great with Nux in catarrhal affections of any kind. On the other hand, Dr. Hughes says "for the stuffy cold I think Nux vomica the specific." It is usually given during the first stage when there is dryness and obstruction of the nose with heaviness in the forehead and impatient mood; the catarrh is fluent in the morning and dry in the evening, and at night with dryness of the mouth without much thirst. Chills and heat alternate in the evening with great heat of the face and head. Nux vomica has stoppage of the nose particularly out doors, but fluent in-doors, while the Pulsatilla coryza is fluent out doors and stopped in-doors. Nux acts best in the fourth or sixth trituration of the powdered nut, given in the evening.

Arsenicum is of great service when the nostrils are stuffed up, with copious discharge of watery mucus and burning of the nose, both externally and internally, with soreness of the adjacent parts. The discharge is thin and corrosive, and it excoriates the upper lip and neighboring parts. There is foul smell in the nose, and occasionally nose-bleed is present. The patient is cold and chilly, and the chills are intermixed with flushes of heat; general debility is almost invariably present. The suffering is relieved by warmth and exercise, and exposure does not aggravate the disease. The patient is thirsty, but drinks little at a time. The triturations from the sixth to the twelfth are best adapted to this disease, though I have had excellent results from the fourth.

Chamomilla is indicated when the coryza has arisen from suppressed perspiration, when there is an acrid discharge from the nostrils with excoriation of the upper lip, shivering with thirst, fever with redness of one cheek and paleness of the other. Chamomilla should never be given lower than the twelfth dilution.

Pulsatilla is frequently suitable after *Chamomilla*. It is indicated by a flow of thick yellowish fetid mucus, swelling of the nose with ulceration of the nostrils, frequent sneezing, and roughness of the voice. The child is chilly in the evening, and has whining mood with absence of thirst. Like *Chamomilla*, *Pulsatilla* acts best in the twelfth or some higher dilution.

Apocynum cannab.—Dr. J. H. Marsden says he has frequently prescribed this remedy for infantile coryza, which is often fatal in

very young children by interfering with respiration, and very generally the results have been quite satisfactory. I have found it equally beneficial in the case of adults.

Merc. iodat. cum Kali iodat., or Double Iodide of Mercury and Potassium.—Sherman's Bulletin says of this salt:—"It causes profuse discharge of watery mucus from the nose, throat, and deeper air-passages, with sneezing, coughing, and watering of the eyes. * * My experience with this preparation for more than three years past has convinced me that it will cure acute catarrh with more certainty and promptness than any other known remedy."

3.—CHRONIC NON-ULCERATIVE INFLAMMATION OF THE NOSTRILS.

NASITIS CHRONICA SIMPLEX,—SIMPLE NASAL CATARRH.

We have already alluded to the fact, that acute inflammation of the lining membrane of the nostrils is liable to degenerate into the chronic condition. This is especially the case in our climate—a climate so favorable for its production, that it has been estimated that at least one-fifth of the whole population of the country have the disease to a greater or less degree. Owing to various causes, chiefly dyscrasic, chronic catarrh assumes two distinct forms, the ulcerative and the non-ulcerative. We shall here consider only the latter.

Symptoms.—The symptoms vary according as there is a deficiency or excess of the mucous secretion. In the former case, there is more or less obstruction of the nasal passages, from swelling of the Schneiderian membrane, which becomes so thickened as to impede the passage of air, and cause a sensation of heat and stiffness in the anterior nares, together with more or less snuffling, and a characteristic intonation of voice. These symptoms increase in wet weather, and in the case of children, especially those of a scrofulous constitution, may become so great as to seriously obstruct the breathing. When the disease affects the posterior nares, the snuffling is more frequent, there being a constant inclination to clear them by forcible inspirations of air through the nostrils. In other cases, the chronic form consists simply in a profuse secretion of mucus, without any other trouble, except the inconvenience which arises from the

necessity of constantly blowing the nose. The secretion is generally of a mucous or muco-purulent character, and of a whitish or yellowish color. If the posterior nares are affected, there will frequently be a trickling of muco-purulent matter into the fauces, and a constant inclination to rid the parts of the offensive matter by hawking, retching, etc. In some cases the discharge is quite purulent, and if long retained, becomes more or less decomposed and offensive *(ozæna);* but this seldom occurs in the non-ulcerative form of the affection. Sometimes the matter is more or less dried or inspissated, and of a yellowish or greenish, and bland character.

The inflamed membrane undergoes marked and peculiar changes. That portion covering the turbinated bones first becomes thick, soft, and vascular, projecting from their surfaces in bright red folds or fringes; afterwards, it loses more or less of its spongy texture, increases in density as well as thickness, and becomes covered with muco-pus.

Etiology.—In most cases the disease results from a continuation or frequent repetition of the acute form. It is found to be generally associated with a scrofulous diathesis; and hence it is reasonable to infer that its chronicity, and in many cases its production, is chiefly dependent upon the strumous condition of the constitution. In some instances, it depends on the lodgement of foreign bodies in the nasal passages, the removal of which is followed by a speedy cure. In others, it appears to arise from the continued action of depressing or irritating influences, either general or local, such as unhealthy employments; living in damp houses, or in close, over-heated rooms; frequent exposure to great atmospheric changes; deficient circulation in, and insufficient protection of, the feet, especially when exposed to the damp ground, etc.

Treatment.—It is highly important that the disease be arrested at this stage, for if allowed to continue, it is almost certain to result, sooner or later, in ulcerative and other morbid processes, besides spreading by continuity of surface from the nasal passages to the ethmoid cells above, the pharynx and larynx below, and laterally into the Highmorian cavities, or through the Eustachian tubes into the tympanum of the ear, and even up into the mastoid cells. Fortunately, simple chronic nasitis is quite amenable, as a general rule, to homœo-

pathic treatment, provided proper regard be paid to the constitutional disorder associated with it, namely, the strumous diathesis. For this reason, it is seldom necessary, or advisable, to make use of local remedies in this form of the disease, though there is generally no particular objection, in case the discharge is very copious and acrid, in endeavoring to moderate it by the use of simple soothing or astringent remedies, such as a warm solution of *Extract of Glycyrrhiza*, or a weak preparation of *Tannic Acid*, or of the *Sulphate of Hydrastia*. Care should be taken, however, not to use astringent lotions so strong as to suppress the discharge, which would be attended in many cases by violent headache and other distressing symptoms. If this result should occur, however, either through treatment or otherwise, it is well to bear in mind that a few doses of *Pulsatilla*, or inhalations of *Spirits of Ammonia*, will quickly restore the secretion, and relieve the distressing symptoms caused by its sudden suppression.

Therapeutic Indications.—In addition to the remedies mentioned under the preceding head, which will occasionally be required, the chronic condition will call for

Alumina.—When there is a red, swollen, and tender state of the Schneiderian membrane, with frequent bleeding; dry catarrh, with stoppage of one or both nostrils; discharge of thick, slimy, yellowish mucus, or accumulations of hard, dry, and greenish-yellow matter, especially in scrofulous subjects.

Anacardium.—Dry or fluent catarrh; obstruction of the nose by swelling, or by accumulation of mucus; tenacious mucus in the fauces, causing retching and gagging; morning accumulations of sticky mucus in the pharynx, with dropping from the posterior nares; patient peevish, unsociable, and desponding; impairment of memory, etc.

Argentum nit.—Painful swelling and obstruction of the nostrils, especially the upper portions; discharge of white matter, resembling boiled starch; accumulations of thick, tenacious mucus in the pharynx, causing constant hawking and spitting.

Berberis vulg.—Obstruction of one or both nostrils, particularly the right; purulent yellow or greenish discharge, especially from the left nostril; aggravation from the least exposure to cold.

Calcarea carb.—This is the principal remedy in scrofulous cases, especially with children. It is often required as an intercurrent remedy, even when other medicines are more specifically indicated.

Causticum.—Dry catarrh, with obstruction of the nose; soreness of the posterior nares and throat, with frequent hawking of tenacious mucus.

Graphites.—Tight, painful feeling in the nose, with soreness; dry catarrh, with headache, nausea, and even vomiting.

Hepar sulph.—Burning sensation in the nose, with dryness; frequent sneezing, with congestion of blood to the nose, rawness of the throat, and cough.

Hydrastis.—Raw, excoriating feeling in the nares, with constant inclination to blow the nose; profuse discharge of thick, white mucus; raw, smarting sensation in the posterior nares, with discharge of acrid mucus; thick, tenacious, muco-purulent discharge from the anterior or posterior nares.

Kali bich.—Acrid or thick, yellow, ropy discharge from the posterior nares; soreness and swelling of the nostrils, especially the right; tendency to the formation of crusts in the nose; cough, hoarseness, etc.

Lachesis.—Swelling of the Schneiderian membrane; discharge of pus and blood from the nose; dryness and soreness of the throat, with constant urging to swallow.

Lycopodium.—Dry catarrh, with obstruction of the nostrils; catarrhal headache, with heat in the nose and forehead; aggravation at night and on lying down.

Manganum.—Dryness and obstruction of the nose; accumulation of yellowish or greenish lumps in the posterior nares, easily expelled in the morning.

Mercurius iod.—Dry, raw, sore feeling, extending from the anterior nares to the larynx, with irritative cough; discharge of purulent or bloody mucus from the nostrils; soreness of the muscles, etc.

Nitric acid—Obstruction of the nose; burning redness of the nose, with dryness, or acrid discharge, especially in the open air; yellowish, purulent or bloody discharge from the anterior or posterior nares, particularly the latter.

Psoricum.—Plugs of tough mucus in the nose; dropping of mucus from the posterior nares, especially at night; accumulation of greenish-yellow mucus in the posterior nares, and detachment and expulsion of lumps of hardened mucus by hawking, in the morning.

Silicea.—Dry catarrh, attended with frequent sneezing; chronic obstruction of the nose, with swelling of the Schneiderian membrane; plugs of mucus in the nose.

Tartar emet.—Chronic catarrh, with dryness of the nasal passages; obstruction of the nose with inspissated mucus; tendency to the formation of crusts in the nose; deficiency of smell and taste.

Clinical Observations.—Jahr recommends for *dry catarrh*, of an obstinate character, *Ign.*, *Lyc.*, *Natr.*, *Nat. mur.*, *Nitr. ac.*, *Phos.*, *Plat.*, and *Sil.;* and for *fluent catarrh*, *Alum.*, *Anac.*, *Calc.*, *Carbo veg.*, *Caus.*, *Con.*, *Graph.*, *Lyc.*, *Natr.*, *Nat. mur.*, *Nitr. ac.*, *Sep.*, *Sil.*, and *Zinc.*

Bæhr says: "The chronic form is, under all circumstances, a very obstinate complaint. This is probably owing to the circumstance that such patients do not take the least care of themselves, and that the swelling of the nasal membrane is constantly increased by new relapses. The more the swelling increases, the more difficult it is to cure the complaint. In recent cases, *Mercurius* and *Hepar sulphuris* may render good service. In neglected cases, *Sulphur* and *Iodium* often afford help; the latter especially deserves attention. *Kali bichromicum* has been praised beyond its due; it is useful only when the coryza is attended with soreness and ulceration of the nose. *Calcarea carbonica* is indispensable in cases depending upon scrofulosis, and where the discharge has a foul odor."

Hale recommends *Am. brom.*, *Cistus*, *Hydras.*, *Arsen. iod.*, *Lob. cer.*, and *Sticta*. Of the *Brom. of Amm.* he says: "I know of no more efficient remedy in that common affection, *catarrh of the posterior nares and fauces*, especially when the discharge is a *thick, stringy mucus*. A few grains of the 1 x trit. three times a day, used persistently for a few weeks, will effectually remove that condition." Of the *Iod. of Ars.* he says: "No matter from what source the discharge arises, if the discharge irritates the membrane *from* which it flows, and *over* which it flows, this medicine is fully indicated. In

this respect it resembles *Nitric acid*, *Ailantus*, *Arum*, *Arsenic*, and a few others; but none possess the symptoms as prominently as this. The discharge is often fœtid, not always; it is generally *watery*, not always; the mucous membrane, where it has its origin, is always red, angry, and sometimes swollen."

Prof. C. C. Smith, of Philadelphia, gives the following indications for remedies:

1. Salty expectoration. Most prominent remedies, *Ars.*, *Nux vom.*, *Puls.*, *Lyc.*, *Phos.*, and *Sepia*.

2. Transparent mucus like the white of an egg. Leading remedy, *Nat. mur.*; next, *Sulphur*; then *Mercurius*.

Dr. Miller reports successful treatment of several inveterate cases with *Corallium* 6. Indication, accumulation of mucus in the pharynx, occasioning constant hawking and spitting.

Prof. J. D. Buck, of Cincinnati, says: "In the primary form of simple catarrh, in scrofulous patients, *Alumina*, *Aurum*, *Lachesis*, and *Silicea* are often specific."

Dr. Ockford, of New Jersey, gives the following clinical cases:

1. Mr. V., aged about forty-five, for some years past has been troubled with catarrh; at times he would be almost free, but the least cold or exposure aggravated the trouble; left side mostly affected, discharge fetid, purulent from left nostril, right nostril closed. *Berberis vulg.* 6 gave decided benefit, and *Psorinum* 30 completed the cure. One year has elapsed without any return.

2. Man of nervo-bilious temperament had catarrh with cough, great accumulation in posterior nares in the morning, when patient hawked up lumps of greenish-yellow mucus; the cough would come on in afternoon and continue till bedtime, and was attended with soreness in the chest. *Manganum* 200 promptly relieved.

3. Mr. B., a man of full habit, had every morning an accumulation of sticky mucus in the fauces, with dropping from posterior nares. The effort to dislodge mucus in morning caused retching and vomiting. There was also present a dullness of head with sense of fullness. *Nux vom.* did not relieve, but *Anacardium* 12 produced immediate amelioration.

4. Chronic catarrh, dropping from posterior nares, so as to awaken patient at night, hawking quantities of lumpy mucus gave temporary

relief from feeling of fullness; mucus in nose would dry like the white of an egg, needing to be forcibly removed. *Psorinum* 200 greatly ameliorated, and until new exposure, produced a cure.

Dr. Payne, of New Hampshire, claims to have had good success by the local use of the 20th or 30th dilution of *Cantharides*, of which he prescribes from two to five drops in five or six tablespoonfuls of warm water, to be inhaled, or snuffed up the head, or thrown up by a syringe, as often as the severity of the case requires. He also gives *Rhus ven.*, 3d to 6th, every morning, alternate weeks in cases of long standing, which remedy he regards as good for the dyscrasia, which he says is really the cause of catarrh, to a greater or less extent.

4.—CHRONIC ULCERATIVE INFLAMMATION OF THE NOSTRILS.

OZÆNA; INVETERATE CATARRH.

Chronic inflammation of the nostrils complicated with ulceration, is called *ozæna*, a term derived from the Greek, and signifying a *bad odor*, or *stench*.

Symptoms.—The characteristic symptoms of ozæna are:—Chronic inflammation of the nasal passages, associated with more or less ulceration of the Schneiderian membrane; caries or necrosis of the subjacent cartilages and bones; and discharge of fetid, purulent, muco-purulent, and sanious matter from the anterior or posterior nares, or from both. The breath is always more or less offensive, and in some instances, especially when necrosis exists, is so intolerably fetid as to render the patient an object of loathing to both himself and others. At intervals, large crusts of dark brown matter, sometimes forming complete casts of the affected passages, of an excessively offensive character, are thrown off from the ulcerated and inflamed surfaces; pieces of bone, also, are sometimes discharged; and occasionally, in syphilitic cases, the ulcerative process continues until, by destroying the greater portion of the lateral cartilages, the septum nasi, and the turbinated bones, much deformity is produced. The

sense of smell is generally more or less impaired, and sometimes entirely lost; that of taste, also, is frequently altered or diminished, and occasionally abolished.

Etiology.—The chief predisposing causes of ozæna are, a psoric or scrofulous condition of the system, syphilis, and pharyngeal or pulmonary phthisis. Other causes are, uncured catarrhs, general debility, suppression of cutaneous eruptions, foreign bodies in the nostrils, and retention of unhealthy secretions in the nasal passages.

Prognosis.—This disease, especially when the vault of the pharynx, the posterior nares, and the ethmoid cells are involved, is not easily removed; and owing to its frequent dependence upon constitutional dyscrasiæ, and the unavoidable retention of a greater or less amount of irritating and unhealthy secretions, and of inflammatory and ulcerative debris, seems in some cases to be incurable; but while a speedy cure is not often to be expected, it is safe to say that, under judicious treatment, "most cases are curable, and that but few (except in phthisical patients,) are incurable."

Treatment.—As the removal of the cause is the first and most important indication of treatment, care should be taken in every case to select such remedies as will cover both the characteristic symptoms of the disease and the existing diathesis, especially the latter; also to persevere in their use until the constitutional dyscrasia, which is often the chief obstacle to be overcome, is so far diminished, or modified, as no longer to exert such a controlling effect upon the disease as to interfere with its successful management.

Therapeutic Indications.—*Acidum nit.*—When the disease has a syphilitic basis, and especially when the dyscrasia has been aggravated by the abuse of Mercury.

Alumen.—This remedy is indicated when the discharges are sanious, especially if ulceration is a prominent feature. It may also be used locally, in these cases, with considerable benefit.

Arsenicum.—Ichorous, sanious, and fetid discharges from the nose, with marked prostration, or great general debility.

Aurum.—Yellowish or greenish-yellow discharges, of a foul or intolerably fetid odor. Aurum is particularly indicated in syphilitic cases, especially when characterized by ulceration of the nasal cavities, and by redness, pain, and swelling of the nose and alæ.

Baptisia tinct.—Thick fetid discharges, accompanied with pain, soreness and ulceration. This remedy is particularly useful in a scrofulous condition of the system.

Iodium.—Carious ulceration, attended with great fetor, pain, and soreness.

Kali bich.—Ulceration of the Schneiderian membrane, attended with loss of smell, and the formation of "elastic plugs" in the nose, the removal of which causes pain and soreness.

Merc. prot. and *M. præcip. rubr.*—Carious ulceration of the nasal passages, accompanied with sanious and bloody discharges, especially in syphilitic cases.

Phytolacca.—Dull, heavy aching in the forehead and about the root of the nose, obstruction of the nostrils, and discharge of thick slimy mucus from the posterior nares.

Tartar em.—Ulcerated, bleeding, and scabby nostrils, with obstruction, and impairment of the senses of smell and taste.

Zincum.—Cases attended with swelling, soreness, dryness, and loss of smell. This remedy is often of great use in rheumatic constitutions.

Auxiliary Treatment.—Local treatment of some kind is generally required in this class of cases, first, in order to secure the necessary *cleanliness* of the nasal passages; secondly, their *disinfection;* and, thirdly, the *stimulation* requisite to promote the healing process. Of the many remedies made use of for these purposes, solutions of Permanganate and Chlorate of Potash, the Chlorides of Soda and Sodium, Carbolic Acid, Aluminium Bromide and Chloride, commonly called Bromo-Chloralum, and Condy's Disinfecting Fluid, are generally found to be the most useful. Warm water, of the temperature of about 70° F., as it is the best solvent of the inspissated mucus, should first be sniffed up the nostrils, in order to loosen the dry and adhering crusts of matter, which may then be removed by repeatedly and energetically blowing the nose. The medicated solution, of the same temperature, may then be drawn up as high as possible into the nostrils, or injected through them by means of a suitable syringe. A spray syringe, with a long curved beak (Pl. IV, Fig. 5), will be useful for the posterior nares. But the most con-

venient and effective method of applying remedies to the ulcerated surfaces, is by means of a small *atomizer*, such as is figured in Pl. IV, Fig. 2. By placing the tube in each nostril alternately, and holding the head well back, by forcibly compressing the bulb, the atomized liquid will in a few moments condense, and trickle through the posterior nares into the the throat. After using it through the nose, the spray may, if necessary, be applied in the same manner to the throat. We generally use from five to ten drops of *Calvert's Carbolic Acid No. 2* to the ounce of water, every night and morning. This method entirely supercedes the *nasal douche*, once so popular, and, unlike the latter, is not attended with any danger to the hearing. As some practitioners, however, still use the douche, we will here give Seyfert's rules for its safe application.

1. The vessel containing the fluid to be injected *must not be higher* than the patient's forehead.

2. The forehead of the patient *must not be inclined forward;* if it is too much inclined, the fluid enters the frontal sinuses.

3. The fluid used in every case must be tepid; and, in bad weather, the patient should not leave the room for a quarter of an hour after the use of the douche.

In cases in which the nasal passages are obstructed with plugs of inspissated mucus, I have found it to be a good plan, *before using the atomizer*, to wash out the nostrils every morning with tepid water by means of the douche, being careful to have it always applied agreeably to Seyfert's rules above given.

Surgical Treatment.—M. Rouge, who claims that the bones are always diseased in these cases, has operated successfully in several very bad cases, as follows:—"He incises the mucous membrane in the gingivæ-labial furrow from the left to the right molar, dividing the frænum near its root; he then cuts down upon the anterior nasal spine, detaches by the bistoury the cartilaginous septum, and, if necessary, divides with the scissors the nasal cartilage at their maxillary attachment, and then divides their septum. The nostril can then be turned upwards. He then seeks for the necrosed or carious portions of bone, removes them, and applies nitrate of silver to the mucous membrane. The parts are then thoroughly

cleansed and replaced. Reunion by first intention has always followed."

In suppuration of the mastoid cells, Dr. White, of Alabama, performs the following operation: "First make a straight incision, about half an inch long, through the skin and down to the bone. Then with a gimlet aspirator-needle, attached to an aspirator, drill a *small gimlet hole* through the bone into the mastoid cells. Then, with the aspirator, suck out every particle of pus. After this, close the *little* incision with adhesive strips, and the patient will get well. Should any more pus form, remove adhesive strips, and, through the same *little* gimlet hole, draw out the pus."

Clinical Observations.—Dr. Ockford gives the following remedies and indications:

Anacardium.—Firm, tough mucus in the fauces; raising it causes gagging and retching; patient is unsociable, and complains of loss of memory, etc.

Aurum.—Boring pain in nasal bones; excessively fetid discharge; severe frontal headache.

Calcarea.—In scrofulous cases.

Nitric acid.—Dropping of water from nose in the open air; fetid, yellowish discharge; dirty, bloody mucus from the posterior nares; nose obstructed.

Sulphur.—Ulcers and scabs in the nose; bloody discharge on blowing the nose; profuse, nauseous saliva.

Arsen. iod.—Dr. Goss says, "In old chronic cases of nasal catarrh where the discharge becomes bloody and fetid, and scabs and pus are discharged from the nose, and the irritation extends to the throat, the *Iodide of Arsenic* continued for some time, together with the use of a douche of glycerine and water, effectually eradicates the disease."

Ruddock recommends the following remedies:

Aurum.—Pain above the nose with redness and swelling; heat and soreness of the nostrils; yellowish-green or yellow discharge; half-watery, half-dry fetid pus.

Iodium.—Great *fetor*; the Schneiderian membrane undergoing putrid ulceration.

Mercurius biniod.—Sanious discharge; destruction of the septum and bony structure of the nose.

Acid. nit.—*Syphilitic* ozæna; and when the patient has been drugged by large doses of *Mercury*.

Arsenicum.—*Ichorous discharge;* fetid and malignant cases, particularly if the constitution is much shattered.

Zinc. met.—Swelling and *soreness* of the nose; loss of smell, dryness, and lachrymation.

Penthorum sed.—Dr. Scudder, eclectic, says he has better results from this remedy in ozæna, than from any other agent he has ever employed.

Chloral hyd.—M. Crequy reports a case of ozæna promptly cured by this remedy, employed as follows:—Chloral hyd., two grammes; Aq. destill., 250 grammes; mix. One table spoonful of this solution was added to a tumbler of water, and used by means of the nasal douche.

Mercurius iod.—Dr. Williams recommends this remedy for patients of scrofulous diathesis, predisposed to glandular enlargements, swellings and ulcerations of tonsils, in which he says it has often proved useful. Special indications are, a foul-smelling, yellow, pus-like substance streaked with blood; headache between and just over the eyes.

Mercurius cor.—Dr. Buck says, "If the catarrh be syphilitic in its character, above all other remedies and modes of treatment, I find the local application with a brush of a solution of *Mercurius cor.* (gr. ss ad Aq. ℥ij) to yield the best results.

Sanguinaria.—Dr. Hale says of this remedy, "It has cured in my hands many cases of ulcerative ozæna, with *epistaxis*." Dr. Powers was also very successful with it in the treatment of obstinate nasal catarrhs and ozæna. He prescribed the 2d trit. of the root as a snuff, and gave at the same time Sanguinaria 3d, or Nitric acid, internally.

Dr. William Proctor, allopathic, says, "If there be ulceration, *iodide of potassium* is called for, but if no ulcers exist, the *bichloride of mercury*, if persevered with, has no equal." He also adds, "If ulcers are present, they may be touched with *iodine* in glycerine and water, with the addition of a little iodide of potassium, or with weak solutions of *nitrate of silver*. The latter is most useful where there is

thickening of the membrane. *Hydrate of chloral*, directly applied, answers a good purpose where the ulceration is sluggish."

Calcarea carb.—Bæhr says this remedy is indispensable in cases depending upon scrofulosis.

Aurum.—This, he says, is far the best remedy for true ozæna; he prefers *Aurum muriaticum*, the metallic gold being much less reliable.

Dr. Holcombe, speaking of a case that had been injuriously treated by irritating injections and douches, says, "The discharge is very considerable, and very fetid, and the pain throughout the head and face greater than I have ever before seen in a case non-syphilitic in character. *Mercurius*, *Aurum*, *Hepar sulph.*, *Kali bich.*, and other remedies, have been faithfully tried and in vain. There has been some mitigation of late from the use of *Kali sulph.*, one of the Schuessler tissue remedies. The headache and facial pains have been decidedly improved by *Nitric acid* and *Kalmia*. It is sometimes astonishing how promptly a headache, really due to nasal catarrh, is relieved by *Nitric acid*. I give it in the 2d decimal dilution.

"Local applications had been tried here *ad nauseam*—from salt and water and the glycerole of *Hydrastis* to the lunar caustic. I recommend the atomization of the *Permanganate of Potash*, 1st decimal. The *Sulphate of Potash* (*Kali sulph.*) is more efficacious in these cases by gargling and insufflation than the *Chlorate*, or than the solution of the *Chloride of Sodium*.

"I can not promise this patient any speedy relief. I never promise to cure a case of chronic nasal catarrh at all. It frequently baffles our utmost effort. When you hear a man boasting of his prompt and brilliant cures of nasal catarrhs, suspect him of great ignorance or of something still worse."

Dr. Martin replies to the above as follows:—"During the past few years, having given some special attention to the study and treatment of this disease, I feel that I can not let Dr. Holcombe's expressions, with regard to chronic nasal catarrh, pass without saying a word for the encouragement of those who, like myself, have been trying not to turn away the afflicted with this loathsome and distressing disease with a stone, when they have asked us for bread."

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He then selects three cases, of different types, with which to show his method of treatment. These cases are so instructive that we think we cannot do better than to quote them entire :

"Case I. F., aged 20 years, syphilitic. This was an obstinate case, and was under treatment nearly two years. I do not know how long it had existed before I was called to treat it. There was swelling and ulceration of the mucous membrane of both nostrils, which interfered very much with breathing through the nose, the eyes sometimes inflamed and sensitive to light, lachrymal ducts partially obstructed, the fauces and velum inflamed, rough and œdematous, an oval hole through the hard palate, two or three lines in diameter, ringing in the ears, hearing but little affected, the nose sometimes swollen with an erysipelatous-like inflammation. There was a corrosive ulcer on the left tibia, the bone of which was denuded in an oblong shape about one inch in the long diameter, from which several spiculæ of bone were removed. I considered this a very unfavorable case, and I confess I did not undertake it with any very great degree of enthusiasm. I can not state the medicines which I used in the early part of the treatment, but the last-used remedies and to which I attribute the cure were, *Proto-iod. of Mercury* 3d dec. trit., gr. 3, half an hour before meals; *Thuya* 30th, at bed time; 2 grs. *Kali Bichromicum*, crude, dissolved in 6 oz. tepid water, used topically night and morning to nasal cavities and bucco-pharyngeal surface. The ulcer on the leg was frequently cleaned with warm water, and dressed with view to protect it from the air and injury by contact.

It is five years since this case was discharged cured, and there has been no return of the disease in any form. The ulcer on the leg improved with the other symptoms, and finally healed. The hole in roof of mouth closed over by the soft tissues.

Case II. Miss H., aged 10, scrofulous diathesis, cervical glands much enlarged, but not painful, has had catarrh for two or three years, alternating better and worse, as such cases usually do. Ulcers on alæ nasi and upper lips, offensive discharge from the nostrils, occasionally blows out lumps of bloody, hardened pus from the nose, has but little appetite, pale, emaciated. Treatment: *Sulph.* 3d and *Arsen.* 3d dil., alternately, two doses of each per day. *Kali perman.* gr. 1-10, dissolved in 6 oz. of tepid water, with which clean nostrils

and throat at bed time by insufflation and gargling; 1-4 oz. *Chloride of Sodium*, to 6 oz. tepid water, used in the morning in same manner as *Kali perman.* There were no important changes in the treatment which continued about two months, when the patient was discharged. Two years have elapsed. This young lady was brought to my office since I commenced writing this article, to be treated for chorea. Upon inquiry I am informed that there has been no return of the catarrhal symptoms.

Case III. Mrs M., aged 42 years. Without any particular diathesis; has had catarrh for some months. She has received allopathic treatment without benefit, and her physicians before abandoning her, advised her to have her teeth extracted, believing that they were the cause of her "bad breath" and to wait and see if her disease would not wear off. Her teeth were all taken out, she got no better, but worse. Feb. 15th, 1873, I was called to see her. Says she has lost all concern about her family and household affairs, is forgetful, can not remember where she has left any article which she may have been using, can not think, when she attempts to do so, her mind becomes so confused that she fears she will go crazy, can not keep quiet, changes from one seat to another, crosses the room and immediately returns, apparently without any object in view, fears she will die, does not sleep more than an hour during the night, has no relish for food, eats but little, and that only to gratify her friends; almost continous effort to clear the throat of a tough, whitish-colored mucus which drops down from the posterior nares frequently; blows lumps of bloody matter from her nostrils; her nose slightly swollen, red and sensitive to the touch, can scarcely breath through one nostril; has a burning pain in her forehead, nose and face; her sight fails rapidly, pharynx smooth, red and dry; fever comes every two o'clock p. m., and lasts two or three hours; nearly two months intervals between menstrual periods.

I did not feel prepared to prescribe for this array of symptoms without consulting the materia medica, but had to do something for her relief before I left. I gave her the following:—*Arsen.* 3d and *Hyosciamus* 3d, alternately every 2 hours. *Kali permang.* qr. 1-10, tepid water 6 oz., wash out the nostrils and gargle the throat, night and morning. I called three days after and found my patient so much

improved that I continued the former prescription, and did not change it (except to lengthen the intervals between the doses), and she was discharged cured on the 17th day of April, and has remained so during the two years which have intervened."

In the *American Observer* for Feb. 1879, Dr. Hiller, of San Francisco, describes an interesting case of ozœna, of over 18 months standing, cured in only *nine days* by *Glanderine* 6, after *Aurum* and *Merc. biniod.* had been given for over three months with but slight effect, and without sufficient encouragement for their further continuation.

5.—LOSS OR PERVERSION OF SMELL.

ANOSMIA; ANOSPHRESIA.

Loss or perversion of smell rarely exists as an independent affection, being generally a mere symptom dependent on some other disease, such as coryza, ozæna, etc.; but as it consists in the abolition, diminution, or perversion of one of the special senses, it is of sufficient importance to be separately considered.

It is only the mucous membrane of the upper portion of the nasal fossæ, namely, that covering the superior and middle turbinated bones and the upper portion of the septum nasi, which is supplied with filaments of the olfactory nerve, and which is therefore capable of receiving the impressions of smell. It follows, therefore, that in order to produce an olfactory impression, the odorous emanations must be drawn freely through the nasal passages. Hence, the various inflammatory disorders of the nostrils, by producing obstructive tumefaction of the mucous membrane that lines them, and by diminishing or altering the natural secretions of the parts—whereby the vaporous emanations of odorous bodies are brought into relation with the terminal filaments of the olfactory nerve—necessarily interfere with the sense of smell; not only causing *a partial or total loss of the same*, but, by the admixture of fresh odoriferous particles with those remaining in the altered secretions of the affected membranes, occasioning also, in some cases, a marked *perversion* of smell, whereby "false" odors are sometimes perceived in place of *true* ones.

The power of smell may also be lost or perverted through injury to the fifth pair of nerves, the nasal branch of which is distributed to the mucous membrane lining the middle and lower portions

of the nasal passages, and by which the latter are supplied with ordinary sensibility. Says Dalton, "if the fifth pair be divided, not only is general sensibility destroyed in the Schneiderian mucous membrane, but a disturbance begins to take place in the nutrition of its tissue, by which it is gradually rendered unfit for the performance of its special function, and the power of smell is finally lost. The mucous membrane, under these circumstances, becomes injected and swollen, and the nasal passage is obstructed by an accumulation of puriform mucus. According to Langet, the mucous membrane also assumes a fungous consistency, and is liable to bleed at the slightest touch. The effect of this alteration is to blunt or altogether destroy the sense of smell. It is owing to a similar unnatural condition of the mucous membrane that the power of smell is always more or less impaired in cases of coryza and influenza. The olfactory nerves become inactive in consequence of the morbid alteration in their mucous membrane, and in the secretions which cover it."

Etiology.—Anosmia is sometimes a congenital defect, an instance of which is mentioned by Dr. Good, in the person of a young lady. Another instance is referred to by Dr. Todd, which occured in the case of a gentleman past the age of fifty. The chief causes affecting the sense of smell are :—Acute and chronic affections of the nostrils, long-continued irritation of the Schneiderian membrane by an abuse of sternutatories, disease of the spongy or other bones of the nose, nasal polypi, tumors compressing the olfactory nerves, and organic alterations of their branches, particularly of the external branches, which, according to Serres, exert a more powerful influence than those of either of the others.

Treatment.—The first and most important indication is, if possible, to remove the cause. For this, reference should be made to the preceding sections, where the therapeutic indications of the remedies embraced in the following synopsis of treatment, are given with sufficient fullness to render any repetition of them here unnecessary :

a. Recent Catarrhal Cases.—Acon., Bell., Gels., Puls., Sang., Sticta.

b. Chronic Catarrhal Cases.—Aur., Calc., Caust., Hepar sulph., Merc., Phos., Plumb., Sep., Sil., Sulph., Zinc.

c. From Obstruction.—Acid m., Acid n., Alum., Carbo veg., Graph., Natr., Nux vom., Phos., Sil., Staph.

d. Perversion of Smell.—Ars., Aur., Calc., Puls., Sulph.

Clinical Observations.—Dr. Hale makes special mention of *Gelseminum* and *Sanguinaria*. Of the former he says, "It has been a valuable remedy in my practice in mild and severe attacks of influenza, with loss of smell, coryza, headache, etc." Of the latter he says, "No drug so surely produces intense irritation of the nasal mucous membrane, when inhaled, as the *Sanguinaria*. Even its internal administration causes coryza. It is not strange, therefore, that homœopathists have found it curative for acute and chronic coryzas; also for "loss of smell." This remedy also has considerable reputation, both as an external and internal remedy, for the removal of nasal polypi."

Jahr says, "The chief remedies against chronic loss of smell are: *Natr. m.*, *Sep.*, *Sil.*, *Sulph.*; or else.; *Aur.*, *Calc.*, *Caust.*, *Kal.*, etc."

Ruddock says, "When *recent*, and dependent on a catarrhal cold, or rheumatism, *Aconite*, in a low dilution, will be readily curative. We have cured *chronic* cases, from similar causes, with *Puls.* or *Merc.*, according to the condition of the patients; *Sulphur* is also valuable in *perverted* smell.

Gels., *Sang.*, *Sepia*, and *Calc.* have been recommended.

Belladonna, according to Jahr, has been found curative in a case of fluent coryza of one nostril, with smell as of herring-brine.

According to Hahnemann, *Calcarea* may be used with especial benefit for "obstruction of the nose by yellow, stinking pus, bad smell and fetor from the nose, smell of manure before the nose, etc."

"Loss of smell" is a prominent symptom of *Ailantus gland.* and also of *Codeine.*

6.—POLYPUS OF THE NOSE.

POLYPUS NASI.

Nasal tumors, whether soft or gelatinous, sarcomatous or fleshy, and encephaloid or malignant, are commonly called polypi, though the term *polypus* should properly be confined to the soft and pendu-

lous mucous growths, the fleshy and malignant polypi being, according to Erichsen, merely varieties of fibrous or encepholoid tumors, springing from the bones in the nasal fossæ, or from the ethmoidal and sphenoidal cells. We shall, however, follow the usual custom, as being the most practical, and note the following

VARIETIES.—1. *Gelatinous Polypi.* These are true mucous growths, consisting of the elements of mucous and cellular tissues. They are soft, gelatinous tumors, more or less pyriform, lobulated, pedunculated, or pendulous, and of a yellowish or greyish color at their roots; but when they descend into the anterior nares, and are exposed to the air, they become of a reddish or purplish color, and in dry weather their surfaces are more or less shrivelled. They are not generally very vascular, except at their bases, where the vessels are comparatively large, thin and fragile. They spring from all parts of the surface of the spongy and ethmoid bones, and in rare instances have been observed to emerge from the antrum and frontal sinuses. For some reason, they never arise from the septum, but most frequently grow from the inferior turbinated bone, at the outer side of the nostril. As they increase in size, they extend into the anterior nares, but when large, they sometimes pass backwards into the fauces, and may be seen hanging down behind the uvula and palate. They are seldom solitary, are of various sizes, and are apt to return after removal.

2. *Fibrous Polypi.* These, though much less common than those just described, sometimes attain to a large size, extending from the nasal cavities into the adjoining sinuses, the throat, and even into the pterygo-maxillary fossa and orbit. They are characterized by the firmness of their texture, which nearly equals that of tendon. This variety almost always occurs singly, bleeds profusely when touched, and most commonly appears in adults.

3. *Malignant Polypi.* These tumors are generally of an encephaloid character, and occur chiefly in children and young people. Their situation is such as to cause great expansion of the bones of the nose and face, forcing them out of their natural position, and thus producing marked deformity. As nothing effectual can generally be done in the way of removing them, they are attended with great

suffering, which, with the accompanying discharges of fetid, purulent, or bloody matter, speedily end by exhausting the patient.

Symptoms.—The first symptom that generally attracts attention, is the obstruction, more or less complete, to respiration through the affected nostril. The patient finds himself unable, as previously, to blow through it, and the voice is observed to have a nasal sound. There is also more or less snuffling, accompanied with a mucous discharge from the nostril. All these symptoms are aggravated by damp weather, from swelling of the adventitious growth. As the polypi enlarge (for there is generally more than one), the respiration becomes more and more difficult, and to facilitate it, the patient acquires the habit of breathing through the mouth. When the growth extends into the throat, there is more or less difficulty of swallowing, especially of liquids; the nose is also enlarged externally on the affected side; and by widely expanding the nostril, at the same time directing the patient to blow through it, the lower extremity of the polypus may be seen. By carefully manipulating the growth with a probe, its size and extent, as well as the position of its pedicle, may generally be easily ascertained. When the polypus becomes so large as to encroach upon the neighboring parts, the accompanying deformity of the features, together with such additional symptoms as the watering of the eyes from obstruction of the nasal duct, partial deafness by encroachment upon the Eustachian tube, increased difficulty of breathing, etc., obviate any difficulty in recognizing the true nature of the trouble. There is, however, according to Gross, a disease of the nasal cavities which is frequentiy mistaken for polypus. It is observed, he says, chiefly in weakly children and in females of a relaxed constitution, and consists in an elongation of the Schneiderian membrane, produced by the effusion of serum into the subjacent cellular substance. A tumor is thus formed of a red, vascular appearance, and of a soft, spongy consistence. The parts on which it grows are the turbinated bones, of which the superior is more frequently affected than the inferior. Both nostrils are sometimes involved. The tumor may exist for a long time, but is always amenable to proper treatment.

Treatment.—The treatment most commonly employed for the removal of polypi, is that of rudely twisting them off with the for-

ceps, or the somewhat slower process of strangulating them with the double canula and noose. These violent modes of removing them are so abhorrent to the feelings of most patients, as to frequently deter them from resorting to any treatment, until the size of the growth renders interference imperatively necessary, when the difficulty of removing them by surgical means is greatly increased. Homœopathists, therefore, generally adopt the plan recommended by Dr. James, namely, that of applying the remedy locally by insufflation, at the same time that it is administered internally.

The patient should be seated, with his head thrown back, when a quill or other cylindrical tube, in one end of which is contained some of the drug in a finely-pulverized state, is inserted into the affected cavity, with the end containing the powder as near the growth as possible without coming in contact with it or the surrounding parts; then, while the patient is holding his breath, the surgeon guides and steadies with his hand the tube and blows through it, and thus scatters the powder over the whole polypus. Or the remedy may be introduced in a similar manner by means of the insufflation tube figured in Pl. IV, Fig. 4, by simply compressing the air-bag with the hand, after the tube is introduced into the nostril as above directed. This, repeated three or four times, at intervals of from three to seven days, as the case may require, is sufficient, according to the above authority, to effect a radical cure.

For the best mode of performing the usual operations in these cases, see chapter on the removal of foreign bodies from the air-passages.

Clinical Observations.—Ruddock advises the following treatment for nasal polypi:—Calc. c., Teuc., Merc. iod., Kali bic., Phos., Thuj., Sang. (internally, and powder of it externally), and Opium. In the choice of one of these remedies, reference should be made to the general constitution of the patient, and it should be used locally, in a more concentrated form, as well as internally.

Hale says of *Sanguinaria*: "Dr. Barton (allopathic) says he has heard of the application of the powdered root to a *fungous tumor* within the nostril, with the effect of producing detumescence, and bringing away frequently small pieces of the fungus, which, in the first instance, impeded the progress of the air through the nostril,

and was supposed to be a polypus. Dr. Smith (botanic) says: "Applied to fungous flesh it proves escharotic, and several *polypi* of the soft kind were cured by it." Dr. Becker (homœopathist) states that a polypus of the nose ceased to grow from the time the powder of the root was snuffed. Several physicians of my acquaintance claim to have cured *nasal polypi* by the internal administration of the tincture."

Dr. Babcock gives the following interesting case:—"Susie B—, of Lancaster, Ohio, a girl ten or twelve years old, was troubled with repeated formations of cysto-mucous polypi in the nose, which her physician was obliged to extract every two weeks. The physician was an allopathist, and in addition to the routine of using the forceps once a fortnight, he gave an internal remedy, which had the effect of so much molasses and water in checking the morbid growth. This treatment was continued for a year, without any success, when the father of the girl concluded to try the "little-pill doctor," and see if he could *cure* her. She came to me Feb. 13th, 1871, and on examination I found a polypus in the left nostril, of about a week's growth. I gave her a prescription, which did not prevent her having the polypus removed at the end of the fortnight, as usual. But at the end of the next two weeks there was no polypus to extract, neither has there been the least trace of one up to this day, making a period of two years and six months. Although it was evident that the first two prescriptions cured the morbid tendency to the growth of polypi, I continued the same remedies for some time afterwards, to prevent a recurrence. The only remedies used during the treatment were *Calcarea carb.* $\frac{3}{10}$ trituration, and *Phosphorus* $\frac{3}{10}$ dilution. These were taken alternately twice a day, a short time before each meal, and on going to bed at night. The Cal. carb. was in powders of half a grain to the dose, and the dose of Phosphorus was six pellets No. 25, making only a grain of the one and twelve pellets of the other each day."

Dr. James, of Philadelphia, says:—"Freshly powdered *Sanguinaria can.* has, in my hands, proved to be one of the best remedies, if not the best, that can be applied. It is an old remedy, and has been used with varied success for many years. But whenever care has

been taken to get the root fresh, as well as to the mode of application, it has never failed to give the utmost satisfaction.

"I will here cite one example from practice. A young lady, A. H——, came under my care in October, 1866, with obstruction of the left nostril, which was increasing in size. In damp weather it swelled the nose externally, as well as the left cheek. Upon examination I found a gelatinoid tumor of considerable size, but easy of access. I proposed immediate removal of it with the forceps, to which she strongly objected. I then applied the powdered *Sanguinaria* as above, and in ten days she reported herself entirely cured. A few days ago I saw her, and there was not the slighest indication of its return. When the growth is very large it is sometimes necessary to forcibly remove it, and then, if this local application, as stated, be used twice thereafter, a temporary relief is converted into a certain cure.

"Dr. Thos. Bryant, of Guy's Hospital, London, reports, after an experience of three or four years, very favorably of Tannin, used in the same way, or as a snuff. I have a case of long standing growth in which I am now using the Tannin with great promise of success."

Dr. Spranger gives two cases of nasal polypus, one of which was treated for a long time with *Calc. carb.*, with higher and lower dilutions, the lowest seeming to have some beneficial effect. The patient was then put on the officinal *Aqua calcis* (lime water), a tablespoonful of which was taken twice a day in milk. After about four weeks of this treatment, not the slightest trace of polypus could be detected.

The other case was a scrofulous patient, in whose left nostril "a tumor" was detected, moist, spongy, and of a yellowish white color. This tumor finally forced its way into the orbit behind the eye (which was somewhat protruded by it), and almost entirely obstructed the passage of air through the nostril, from which pus-like matter could be blown, but only after violent straining and blowing for hours. All the practitioners that had previously attended him called the disease nasal polypus, except one, a medical professor, who first diagnosed cancer of the eye, but who afterwards called it polypus. Dr. Spranger prescribed *Merc. biniod.*, 2d dec. trit., one or two grains of which were blown up into the nostril thrice daily.

After eight days the polypus in the nostril had entirely disappeared, but the condition of the eye remained the same. The Doctor then prescribed *Aqua calcis*, a tablespoonful three times a day in milk, at the same time using *Merc. biniod.* as before. This treatment was continued six or eight weeks, when no trace of the disease could be seen, and the patient was pronounced perfectly cured.

Bæhr says: "In treating a nasal polypus, we use the following remedies: *Teucrium marum verum*, especially for mucous polypi, to be used internally and externally; as an external application we use the pulverized herb as snuff. *Calcarea carbonica*, in the higher attenuations, is recommended by many authorities, likewise for polypus excresences of Schneiderian membrane. We have never been able to obtain any good from its use in this disease. Against sarcomatous polypi we frequently find useful: *Kali bic.*, *Phos.* or *Sulph.* The result of the treatment, however, in such cases, is much less favorable than that of mucous polypi."

Dr. Kayser has reported the following cases of nasal polypi to the Hom. Society of the Rhine and Westphalia. It will be seen that he obtained the best results by using the remedy (*Calc. carb.*) low.

Case I. A woman sixty-four years old had a mucous polypus of the nose. It had been removed several times by torsion; the last time three months ago, then it grew large. The Doctor gave *Calcarea carb.* 12th, trituration, and after a month the sixtieth, after which improvement began. In the third month *Calc. carb.* 30, globules, with continued decrease of the swelling.

Case II. An old man, recommended by the first patient. Also a mucous polypus of the nose. *Calc. carb.* also did considerable. The Doctor gave the fifth and afterwards the thirtieth. When this dilution ceased to act, he went back to the fifth, from which the improvement again made progress, and afterwards with the third potency.

CHAPTER II.

AFFECTIONS OF THE ORAL CAVITY.

The anatomical and physiological relations of the mouth to the respiratory system, are similar to those of the nasal fossæ; the buccal cavity being one of the outer doors, so to speak, of the vestibule of the lungs. As such, it is so evidently associated, at times, with the system of respiration, that it may justly be considered an integral portion of it. This is especially the case with children, with whom breathing by the mouth is such a common occurrence, that, to describe the diseases of the respiratory passages, we shall have to include those of the oral cavity.

1.—SIMPLE INFLAMMATION OF THE MOUTH.

DIFFUSE STOMATITIS; STOMATITIS SIMPLEX.

Symptoms.—Simple stomatitis is characterized by more or less redness, heat and tenderness of the mucous lining of the mouth; and when severe, is attended with considerable pain and swelling. Sometimes the mouth is dry and clammy; at other times there is a copious secretion of saliva from the adjacent glands. At first, the tongue is coated with a whitish fur, which soon peals off, leaving the surface red, shining and tender. In some cases the gums become implicated, and, swelling up around the teeth, ulcerate and bleed.

Etiology.—This form of stomatitis is generally associated with some other disease, as fever; but it is sometimes produced by local causes, such as strong acids, alkalies, and other corrosive substances, scalding drinks, gastric irritation, accumulations of tartar about the teeth, the use of strong liquors, acrid medicines, and hot food.

Treatment.—The first and most important point in treatment is, if possible, to remove the cause. Hence, gastric disturbances should be regulated, and if the diet is at fault it should be corrected. In many cases it will be found advisable to restrict the diet for some time to simple milk, or milk to which a small proportion of lime-water has been added. Mucilaginous, farinaceous, and other bland

substances, are also appropriate. Afterwards the diet may be strengthened by the addition of such articles as oysters, scale fish, and soft-boiled eggs; and as the disease declines, animal broths, such as beef and mutton, may be added.

THERAPEUTIC INDICATIONS.—*Mercurius.*—This remedy is generally specific, especially when there is a copious secretion of saliva, with swelling of the glands.

Aconite.—Dryness of the mouth and tongue; soreness in the region of the salivary ducts; ptyalism.

Alumina.—Sore, burnt feeling about the gums, tongue, and palate; preternatural dryness, followed by increased secretion of saliva; ptyalism.

Belladonna.—Inflammation of the lining membrane of the mouth and fauces, with swelling; swelling of the tonsils; hemorrhage from the mouth and nose; profuse ptyalism.

Carbo veg.—Bleeding of the gums, with looseness of the teeth; ptyalism.

China.—Swelling of the gums, looseness of the teeth, and ptyalism; also to strengthen the patient during convalescence.

Hydrastis.—Clammy condition of the mouth, with yellow coat on the tongue. Used also as a wash.

Hamamelis.—Hot, burnt feeling in the mouth, with great tenderness; swelling of the gums; ptyalism. Used also locally as a wash.

Kali Chlor. - Next to Mercurius, this is, perhaps, the best general remedy for simple stomatitis, especially if attended with ptyalism; it may also be used as a wash, two or three grains to the ounce.

CLINICAL OBSERVATIONS.—Ruddock says that, if used early, the affection is often immediately suppressed by a wash of *Tannic acid* (℥ j & aq. ℥ viii). He also adds, that the *Sulphurous acid spray*, with the help of *Sulphur* and *Hep. sulph.*, has rendered important service.

Dr. Hale says that *Hydrastis* has always been a favorite domestic remedy in "sore mouth." Many physicians use it in all forms of *stomatitis* of children. I have witnessed, he says, the most obstinate varieties of these affections yield to the local application of Hydrastis in decoction or powder, after the mineral acids, astringents, nitrate of silver, of the old school, and even homœopathic remedies, had been tried in vain. The best method of application is to add one drachm

of the tincture to half a pint of water, and use this as a wash every three or four hours. He further adds, "The best preparation for use in diseases of the mouth and fauces, is the Muriate of *Hydrastia*—one grain to the ounce of water—applied every three or four hours. It is much more successful than the tincture."

Bæhr, speaking of the employment of *Belladonna* in the various inflammations of the mouth and fauces, says, "Independently of the circumstance that children are most liable to these inflammations and that Belladonna acts most powerfully in the infantile organism, certain abnormal changes in the buccal cavity constitute some of the constant, we might almost say characteristic, pathogenetic symptoms of this drug. It corresponds more particularly to stomatitis proper at the commencement of the disease; likewise to the higher grades of acute catarrh. On the contrary, its usefulness in the exanthematic forms is very questionable, although we have frequently seemed to check the formation of apthæ by its timely use. The more marked the constitutional symptoms, the more specifically is Belladonna indicated."

2.—FUNGOID INFLAMMATION OF THE MOUTH.

APHTHOUS STOMATITIS OF OLD AUTHORS.—THRUSH.

This form of stomatitis, generally called *thrush* or *muguet*, may occur at any age, but is usually met with in very early life, constituting the common form of infantile sore mouth.

Symptoms.—It first appears on the inside of the lips, on the tongue, or at the angles of the mouth, in the form of small whitish points or specks, which, by increasing in number, coalesce and form patches of curd-like matter upon the inflamed surface of the subjacent membrane. If not checked, it sometimes extends to the pharynx, and even to the stomach and bowels. Now and then a few herpetic vesicles may be discovered upon the affected surface, giving it more or less of an aphthous condition, but their presence in these cases is purely accidental, and probably nothing more than the simple result of irritation. *(See next Section).* In most cases, the general system sympathises more or less with the local inflammation, exciting fever, vomiting, and diarrhœa. Both the vomited matter and the stool are

greenish looking and sour, the color depending, not on the presence of bile, but, probably, upon extravasated and altered blood.

Prognosis.—Cases of this kind, occurring in infants of poor and feeble constitutions, are very apt to prove fatal, particularly if the child becomes somnolent, and the curdy matter appears in the stools. Ordinarily, however, the affection is purely local, and, under proper treatment, runs a short and favorable course. Sometimes, especially if wrongly managed, the complaint becomes chronic, and may then last for weeks, and even months.

Etiology.—The inflammatory product consists of a "cryptogamic vegetation *(oidium albicans)*, the sporules of which increase with great rapidity, and form tubular fibrils. Their appearance indicates an acid condition of the buccal secretions, which is normal in the young infant, and accounts for the greater liability of infants than adults to this affection. It also accounts for its frequency in foundling hospitals, where it proves infectious." In most cases the disease seems to be due to a want of vigor in the infant, arising from a delicate or strumous constitution, or from unfavorable circumstances, such as nursing unhealthy women, being over-fed, or brought up by hand, or living in an impure atmosphere and upon insufficient and unhealthy nourishment.

Treatment.—Particular attention should be paid to cleanliness, ventilation, out-door exercise, and a proper amount and quality of clothing and diet. The mouth should be carefully and thoroughly cleansed with cold water, either simple, or medicated with *Sulphurous acid*, *Hypo-sulphite of Soda*, *Carbolic acid*, etc., immediately after the child is fed; after which cool mucilaginous and soothing drinks may be given, such as infusions of slippery elm, flaxseed, marsh-mallows or quince-seed, or a weak solution of borax and honey. If the mother is in ill-health, the child should be weaned, or provided with a wet-nurse. In the former case, pure cow's milk, or if this disagrees, oatmeal and milk, thoroughly cooked and strained, will generally be found to be the most suitable diet.

Therapeutic Indications.—*Mercurius*.—As in other forms of stomatitis, this remedy will generally be found specific, especially if administered as soon as the white patches make their appearance. It is also indicated for diarrhœa, ptyalism, offensive breath, etc.

Arsenicum.—Extension of the disease to the stomach and bowels; watery diarrhœa, great prostration, coldness of the surface, dark-colored patches having an offensive smell, etc.

Borax ven.—This is a sovereign remedy for this affection, so long as it is confined to the mouth. The first decimal trituration may also be applied to the affected surfaces; or the mouth may be washed from time to time with a weak solution in water (grs. v ad aq. ʒ j), to which a little *Glycerine* may also be added.

Sulphur.—As an intercurrent remedy, and also when the tongue is loaded with a thick yellowish or brownish coating, with swelling of the gums, and offensive and sour smell of the breath.

Clinical Observations.—Jahr recommends for this form of stomatitis, *Ars.*, *Bor.*, *Merc.*, *Sulph.* and *Sulphurous acid.*

Ruddock advises, in addition to the forgoing remedies, *Bryonia* or *Nux vom.* when there is gastric derangement, with dryness of the mouth, and white or yellow mucus on the tongue.

Bæhr says, "The chief remedy, which is sometimes sufficient without any other drug, is *Borax*, with which the diseased parts may be dusted by means of a camel's-hair pencil. Beside Borax, *Acidum sulphuricum* and *muriaticum* have an excellent effect, the latter more particularly if there are distinct signs of decomposition of the blood. If thrush supervenes during the presence of other morbid derangements of the mouth or the general organism, it is better to proceed against the primary affection exclusively, since the lesser grades of thrush are not, of themselves, a threatening disorder, and the trouble is sufficiently attended to, if its further spread is prevented."

Hale recommends for this condition of the mouth and fauces, *Arsenicum*, *Borax*, *Carbolic acid*, *Chlorate of Potassa*, *Cornus circin.*, *Eupatorium arom.*, *Euphorbia cor. Hydrastis*, *Rhus ver.*, *and Veronica bec.* He also gives the following clinical indications:—

"If the odor is very offensive or cadaverous, *Carbolic acid* washes are useful; if *not*, the *Sulphite of soda*, or *Borax*, are better.

"*Cornus circinata* is very popular in this country; it certainly has some marked specific virtues in these conditions, even when chronic. It acts best when used as a lotion, and also internally in appreciable doses of the tincture or infusion of the recent bark.

"The late Dr. Hill once recommended *Eupatorium aromat.* very highly in this disease in both women and children. He used it as a wash, as well as internally.

"In that condition often seen in children and nursing women, and vulgarly known as "*thrush*," I would advise the lower dilutions of the tincture of *Euphorbia cor.* After this, *Hydras.*, *Rhus ver.*, *Bor.*, and *Ars.* or *Tar. em.* may be tried. In weakly subjects *Phosphoric* and *Sulphuric acids* will prove useful.

"The late Dr. Prentice says of *Veronica bec.*, that he had used it successfully in this complaint in both women and children."

3.—APHTHOUS INFLAMMATION OF THE MOUTH.

APHTHOUS, HERPETIC OR VESICULAR STOMATITIS.

Symptoms.—Vesicular stomatitis is a form of sore mouth characterized by the eruption of small, white, transparent vesicles, like beads of sweat, beneath the epithelium, and when broken forming small ulcers, with whitish surfaces, called *aphthæ*. This affection should be carefully distinguished from the fungoid variety just described, to which it bears a superficial resemblance, and with which it is frequently confounded. This is especially apt to be the case when, as occasionally happens, herpetic vesicles and patches are present in the fungoid variety. (*See the preceding Section).*

The latter is a *cryptogamic growth* upon the surface of the epithelial coat of the mucous membrane, while the former originates beneath it, giving rise to *vesicles* which, when ruptured, produce small painful whitish ulcers, with inflamed borders. It occurs under two different forms, the distinct and the confluent. The former is a comparatively trifling affection, and is always confined to the mouth. The latter, on the other hand, is much more severe, and, like the fungoid variety, frequently extends to the pharyx, and may even reach the stomach and bowels. Like it, also, it sometimes causes fever, vomiting, and diarrhœa. The disease affects both children and adults, but most frequently the latter, especially women in childbed.

Etiology.—The causes of this particular form of stomatitis are wrapped in obscurity. In some cases it appears to be simply a neurosis, as in some forms of herpes. In others, it evidently depends

upon some derangement of the digestive functions, of which it is symptomatic. When confined to the mouth, it probably arises from some local cause of irritation, conjoined, it may be, with defective nutrition. In adults it is frequently caused by the irritation of decayed teeth.

TREATMENT.—Demulcent applications, such as flaxseed tea, mucilage of slippery elm or quince seed, and almond emulsion, are all of a soothing and grateful character. *Borax* is also a very useful remedy, whether administered internally, or used locally. In severe cases, particular attention will need to be paid to the constitutional disorders with which it is associated, and upon which it so frequently depends.

THERAPEUTIC INDICATIONS.—*Agaricus.*—Soreness of the inner mouth, especially the palate; swelling and inflammation of the gums; bad taste and fetid odor; *aphthæ.*

Amm. carb.—Redness and inflammation of the mouth, with swelling; burning *vesicles* on the inner side of the cheeks and lips, and on the tongue.

Antimo. crud.—Violent ptyalism from the nose and mouth; rawness of the palate; *vesicles* on the tongue; difficult deglutition.

Apis mel.—Red, fiery appearance of the mouth, with great tenderness; *vesicles* on the tongue.

Argentum met.—Submaxillary region swollen, with difficult deglutition; *aphthæ* on the tongue.

Arsenicum.—*Aphthæ* in the mouth, with burning and swelling; gums sore and bleeding; diarrhœa and great debility.

Borax ven.—*Aphthæ* in the buccal cavity, with bleeding of the gums, and great tenderness of the gums and mouth. Especially suited to infants and young children.

Calcarea carb.—*Aphthous* condition of the mouth, with swelling of the cheeks, and burning of the mouth and tongue.

Cantharides.—Redness and inflammation extending down to the stomach; *vesicles* in the mouth; ptyalism.

Hamamelis.—*Aphthous* inflammation of the mouth and tongue, with great dryness and heat; tongue coated white.

Hydrastis can.—*Aphthous* inflammation of the mouth, with excessive secretion of tenacious mucus; tongue large, flabby, and

marked by the teeth. Hamamelis and Hydrastis should also be used locally (℥ j ad aq. ℥ viij).

Mercurius.—*Aphthous* inflammation of the entire buccal cavity, including gums, tongue, lips, cheeks, palate and fauces, with heat, soreness, swelling and fetor; bleeding of the gums and looseness of the teeth; ptyalism.

Natrum mur.—*Vesicles* on the gums and in the mouth; swelling and soreness, with bloody saliva.

Nitric acid.—Stinging, burning sensation, with *vesicles* in the mouth and fauces; bad odor from the mouth; bleeding of the gums, with looseness of the teeth; ptyalism.

Nux vom.—*Aphthous* inflammation of the gums, tongue and mouth; bloody saliva, with swelling of the gums, fetid breath, and looseness of the teeth.

Phytolacca.—Tenderness and heat in the mouth; metallic taste; *vesicles* on the sides of the tongue; ptyalism.

Rhus ven.—Great redness of the mucous membrane of the mouth and tongue; slimy taste in the mouth; *vesicles* on the under side of the tongue.

Staphysagria.—Fungous excrescences on the gums and inside of the cheeks; *vesicles* in the mouth, with swelling of the tonsils and submaxillary glands; ptyalism.

Sulphur.—*Aphthous* inflammation, with swelling of the gums, sour breath, sunken cheeks and hollow eyes; ptyalism, with bleeding and fungous gums.

Tarter em.—*Aphthous* inflammation of the mouth and tongue; red, cracked and excoriated lips; great dryness and burning of the mouth, with swelling of the tonsils; vomiting of milk after nursing.

Clinical Observations.—Dr. Freeman recommends a mouth-wash containing *Kali chlor* ℥ j to water Oj; also the sucking of a crystal of the salt occasionally. Dr. Burnett prefers a wash of *Kali permang.* Ruddock recommends the *Sulphurous acid spray;* also a wash composed of one part of *Borax*, *Hydrastis*, *Carbolic acid*, or *Sanguinaria*, to twelve or fifteen parts of water.

Hale says, "*Caulophyllum* alone will cure aphthæ of the mouth, especially in pregnant and nursing women, and even in children. A weak solution of the tincture in water, used as a wash and taken internally, will often prove curative in quite severe cases."

4.—ULCERATIVE INFLAMMATION OF THE MOUTH.

Although some degree of ulceration is occasionally present in other forms of stomatitis, it is confined in such cases to the superficial layers of the mucous membrane, and does not constitute a principal feature of the disease. There are, however, several varieties of sore mouth of which ulceration is a characteristic symptom, namely, (1) cancrum oris, or canker, (2) stomatitis materna, or sore mouth of nursing women, and (3) mercurial stomatitis; and to these, therefore, we shall restrict the application of the term.

1.—Cancrum Oris, or *canker*, generally first shows itself in the form of a large ulcer, with an inflamed border and grayish base, on the inside of the cheeks or lips, or on the gums. The surrounding parts are more or less inflamed and swollen; and when the canker is situated upon the cheek or lips, there is considerable external tumefaction. The ulcer is very painful, and attended with more or less fever and constipation. Sometimes, especially in unhealthy subjects, it assumes a gangrenous character, constituting the variety called *gangrena oris*, or sloughing phagedena of the mouth, and is then a very fatal affection. This complication, however, is not common, but, as we shall see, occurs more frequently in *mercurial stomatitis*, being one into which the latter disease is apt to degenerate. In these cases the gums and jaws become extensively implicated; the teeth frequently fall out; and the breath becomes intolerably fetid; there is also more or less enlargement and tenderness of the submaxillary glands. In severe forms of the disease, the destructive process rapidly extends, so that in a short time the lips, cheeks, tonsils, palate, tongue, and even a large part of the face, may become gangrenous. When this occurs, the disease extends to the alveoli, the teeth fall from their sockets, portions of the bone die and exfoliate, and horribly fetid saliva and fluid flow from the mouth. The patient now becomes greatly prostrated. Hectic fever, night sweats, and diarrhœa supervene, the latter being attended with profuse discharges of a watery and offensive character. In some cases the lungs become involved, giving rise to cough, pains in the chest, and hurried and difficult breathing.

Etiology.—The disease is most apt to occur in ill-fed, tuberculous children, from two to seven years of age, especially those who live in low and damp situations. It frequently supervenes on measles. Dr. Ketteridge, who has always found tubercles in these cases, asserts that it can only arise in children of a tuberculous diathesis. It certainly appears to have a close connection with a tendency to consumption of the lungs and bowels, and then not unfrequently proves fatal.

2.—Stomatitis Materna, or the *sore mouth of nursing women*, is a form of ulcerative stomatitis which attacks women while suckling, or in an advanced state of pregnancy. It first shows itself in the form of small, hard, painful tumors on the side of the tongue, which afterwards ulcerate, and cause sores of a very painful character. The ulcers are surrounded by hard, elevated and inflamed borders. They gradually multiply and increase in size until the inflammation covers the whole of the buccal cavity. In this state, neither food nor drink can be borne. If not arrested by treatment, the disease extends downwards, producing more or less vomiting and diarrhœa, and attended with loss of appetite, fever, emaciation, debility, and sometimes death. The disease generally yields to treatment, if the child is promptly weaned; otherwise it is sometimes exceedingly obstinate.

3.—Mercurial Stomatitis, as the name imports, is an inflammation of the mouth caused by the injudicious use of mercury. Every degree of inflammation may exist in these cases, from that which scarcely reddens the gums, to that of the most frightful ulceration and deformity. When fully developed, there is, in most cases, a constant and copious flow of saliva; the tongue, gums, palate, cheeks, and salivary and absorbent glands are swollen and painful; the gums are sometimes extensively ulcerated, so that the teeth become loosened and fall out; and there may be so much tumefaction of the tongue and mouth, that the patient can neither speak nor swallow. In such cases, more or less sloughing also occurs, so that the jaw bone itself is sometimes exposed. Fever of an adynamic type is a constant attendant of this condition; and what with the accompanying hemorrhages, the deprivation of nourishment, and the exhausting effects of the disease, the patient may even be unable to survive the attack. In many cases this sloughing

process predominates, constituting what is called *gangrena oris*, or gangrenous inflammation of the mouth; in fact, as before stated, this condition is a frequent complication of mercurial inflammation, or rather, this affection, in very young and tender subjects, is apt to assume a gangrenous character from the very outset, and prove speedily fatal to the patient. In these cases, not only is there extensive sloughing of the soft parts, but necrosis of the palatal, ethmoidal and maxillary bones sometimes takes place, producing an amount of local mischief fearful to behold. Happily, such cases are now far less frequently met with than at former periods, when the human system was fairly saturated with the destructive mineral, and the constitution of both parent and child was greatly undermined by its indiscriminate and poisonous use.

TREATMENT.—As faulty nutrition lies at the foundation of every form of ulcerative stomatitis, medicines alone are likely to be of but little use unless hygienic rules are rigidly enforced. When the patient is compelled to remain indoors, care should be taken to see that the rooms are properly ventilated, and that pure, dry, fresh air is supplied night and day. Whenever practicable, exercise in the open air will prove highly beneficial, and should be taken as regularly as the weather will permit. The food should always be of the most nutritious character, light, and easily digestible. Milk, soft-boiled eggs, strong beef tea, mutton broth, etc., together with a due quantity of farinaceous articles, such as rice, barley, and tapioca, are much more suitable than watery and succulent vegetables, sweet, fat, salt, or highly-seasoned food, or even fruit, especially that which favors the production of acidity. The clothing should be carefully adapted to the season, and should be warm, light and comfortable. The extremities, especially, should be kept warm and dry.

THERAPEUTIC INDICATIONS.—*Agaricus.*—Great soreness of the mouth, especially of the palate; swelling and inflammation of the gums; bad taste and fetid odor.

Argentum met.—Sub-maxillary region swollen, with difficult deglutition.

Arsenicum.—Ulcers in the mouth, with burning and swelling; gums sore and bleeding, with looseness of the teeth; gangrenous condition, with great debility.

Baptisia tinct.—Ulceration and inflammation of the tongue and mouth; filthy taste, with flow of saliva; soreness of the teeth and gums; oozing of blood from the gums.

Benzoic acid.—Extensive ulceration of the tongue and inside of the cheeks.

Calcarea carb.—Burning of the mouth and tongue, with swelling of the cheeks, and ulcerations. Especially required in scrofulous or tuberculous cases.

Carbo veg.—Bleeding of the gums, with looseness of the teeth, putrid odor of the breath, from bad conditions of the mouth and gums, especially when arising from the abuse of mercury.

China.—Swelling of the gums, looseness of the teeth, bad breath, and great debility.

Cistus can.—Dryness and heat of the mouth; swollen and bleeding gums; looseness of the teeth. Especially adapted to scrofulous cases.

Hepar sulph.—Great fetor of the breath, especially when it results from the abuse of mercury.

Hydrastis can.—As a local remedy in all cases of ulcerative stomatitis.

Kali chl.—Both internally and locally, especially when there is fetor resulting from previous mercurial ptyalism.

Kali hydri.—Ulcerative condition of the gums, tongue and cheeks, attended with swelling, bloody saliva, etc., especially in nursing women.

Mercurius.—Ulcerated condition of the entire buccal cavity, with heat, soreness, swelling and fetor; tongue thick and marked by the teeth.

Muriatic acid.—Canker associated with other disease, such as measles.

Nitric acid.—Ulcers in the mouth, with putrid breath, bleeding of the gums, looseness of the teeth, and swelling of the tonsils. Especially adapted to cases resulting from mercurial poisoning.

Nux vom.—Swelling of the gums and palate, with fetid breath, bloody saliva, looseness of the teeth, etc. Especially adapted to cases complicated with indigestion and constipation.

Phytolacca.—Especially suited to scrofulous and mercurial cases.

Sulphur.—As an intercurrent remedy, and in cases characterized by sour breath, bleeding and fungous gums, sunken cheeks, and hollow eyes.

Clinical Observations.—Dr. S. C. Shane, who appears to have had considerable experience in the treatment of ulcerative stomatitis, says: "The remedies that are employed in this form of stomatitis, with most benefit, are *Belladonna*, *Baptisia*, *Mercurius solubilis*, *Mercurius proto-iodatus*, *Arsenicum* and *China*. For the chill and fever, headache, soreness of the flesh, aching of the limbs, a feeling as if the flesh had been bruised, *Belladonna* 3d and *Baptisia θ* were given alternately every two hours. If there was not much headache, with the above symptoms, Baptisia alone was given. These symptoms would seem to indicate Aconite, but it did not afford any relief. After the fever abated, *Mercurius sol.* 3d was given, for soreness and sponginess of the gums; small ulcers on the inside of the lips, cheeks and edges of the tongue; fetid breath; tendency to sloughing of the gums, or where the sloughing had already begun; heavy, yellowish, or rather grayish coating on the tongue, with metallic taste and profuse secretion of saliva. When there was, in addition to these symptoms, much swelling of the salivary glands and glands of the neck, *Mercurius proto iodatus* seemed to act more promptly. When the Mercurius did not relieve the above symptoms, *Phosphoric acid* seemed to act well.

If there was much burning in the ulcers, with a feeling of prostration, *Arsenicum album* was given with good results. Sometimes it was indicated from the beginning, particularly where the fever was remittent or intermittent in its character. In such cases, under the use of the Arsenicum album, the disease was cut short in the outset. *Hydrastis* and *Chlorate of Potassa* were used locally with more benefit than any other application. The Chlorate of Potassa was given particularly where there was much fœtor from the mouth. Under its use fœtor was removed, and the ulcers assumed a more healthy appearance.

For constipation, *Podophyllin 1st* acted promptly, and after an evacuation produced by Podophyllin, the ulcers in the mouth healed rapidly. *China*, after the mouth was well, was very beneficial.

To sum up the treatment briefly, *Belladonna* and *Baptisia* for the first stage of the disease. *Mercurius solubilis* and *Mercurius protoiodatus*, *Phosphoric acid* and *Arsenicum*, for the condition of the mouth. *Hydrastis* and *Chlorate of Potassa*, for local applications. *Podophyllin* for constipation, and *China* for debility. In no case, where the patient was treated homœopathically from the beginning, was the disease followed by difficulty in the lungs, or diarrhœa ; but where they were treated allopathically, diarrhœa followed, with some degree of pulmonary irritation; in some cases amounting to inflammation. *Phosphorus*, in such cases, removed the trouble in the lungs, and *Pulsatilla* restored healthy action to the bowels.

A little girl, aged six years, was brought to my office, who had passed through the "sore mouth" under allopathic treatment, with the loss of the entire upper lip and all the front teeth of the upper jaw, with a portion of the bone. She had a dry cough, tightness of the chest, hurried breathing, loss of appetite, vomiting when anything was taken into the stomach, diarrhœa, stool watery and mixed with undigested food, restless and wakeful at night, much emaciated, with great debility. *Phos.* 3d and *Puls.* 12th restored her to health in less than two weeks."

Dr. F. C. Hunter says: "I have used the *Eupatorium aromat.* with excellent effect in stomatitis materna, after failure with other remedies.

Dr. Walker reports several cases of ulcerative stomatitis, occuring in children, successfully treated with *Baptisia tinct.* "The patients were feverish, the mouth hot, red, and on the mucous membrane of the buccal cavity were numerous "canker spots," superficial ulcerations, surrounded by red areolæ. The breath was fetid, and there was present in every case *profuse salivation.* When possible, it was applied locally to the surface, (20 drops of the tincture to half a cup of water) and the medicine given in the first dilution every four hours." An epidemic of this kind occurred in the city of Chicago, during the summer of 1865, in which Baptisia, used as above, was said to have been more successful than Mercurius. The disease lasted from five to seven days.

Dr. Lilienthal says of the Phytolacca in stomatitis ulcerosa and gangrenosa: "We have had here quite a number of cases lately,

and cured them entirely from beginning to end with *Phytolacca decandra*, as it corresponds to every stage of the disease. Only where we got our patients from other hands, and there was much fetor from the mouth, we used the permanganate of potash as a wash, with quick and decided relief. I consider it as belonging to the diphtheritic family, for which class these two remedies are pre-eminently specific."

Dr. Ussher says of the value of *Nitric acid* in mercurial ptyalism, "I have had three instances this month of a small dose salivating; one was from *Merc. sol.* 2 x trit, another from 3 x trit., and the most marked from the 2 x trit. of *Merc. cor.* Here I was glad to have *Acid nit.* 1 x, which soon set matters square."

Dr. Hale remarks of *Hydrastis can.*: "Many physicians use it in all forms of *stomatitis* of children; in simple ulceration of the buccal mucous membrane; in mercurial sore mouth, and in stomatitis materna. I have witnessed the most obstinate varieties of these affections yield to the local application of the Hydrastis in decoction or powder, after the mineral acids, astringents, nitrate of silver, of the old school, and even homœopathic remedies had been tried in vain. The best method of application is to add one drachm of the tincture to half a pint of water; use this as a wash every three or four hours."

We have always found some form of *Mercurius* most efficacious in idiopathic ulcerative stomatitis, and have repeatedly verified Jahr's indications:—"*Red, fungous, detatched, ulcerated, and readily bleeding gums*, with *burning pains at night*, sensation of excoriation, especially when touched; *looseness of the teeth, inflammation, excoriation and ulceration* of the tongue and buccal cavity; fetid, cadaverous smell of the mouth, and of the ulcers; *profuse discharge of offensive*, or else *sanguineous saliva*, with ulceration of the orifice of the salivary duct; swelling, rigidity, and hardness of the tongue, or moist tongue covered with white mucus; paleness of the face, with shivering; loose, scalding evacuations." Bæhr says of this remedy, "There is no medicine that furnishes such a complete image of the most violent form of stomatitis as Mercury; the resemblance is so great, that without an exact investigation of the anamnestic circumstances of

the case, we should, in many cases, be unable to decide whether the disease is mercurial or a simple form of stomatitis." He further adds, "It is suited to every grade of the disorder, even to ulcerations of the mucous lining and to aphthæ."

Dr. Burt gives the following severe case of salivation cured by *Iris versicolor*: "In a very severe case of salivation in a young lady after she had been attacked with malignant diphtheria, where the parotid glands were much swollen, and the saliva discharged in immense quantities—apparently three quarts a day would be secreted and spit from the mouth—I gave Mercurius, Aconite, Belladonna, Kali bichr., Iodine and Nitric acid. Not one of them had the least effect. I then gave *Iris*, and in two hours there commenced to be a change for the better. In two days the profuse secretion of saliva had entirely ceased, with a great diminution of the glands. The fourth day she was discharged cured."

Dr. Hale says of *Podophyllin*, "It is homœopathic to ptyalism, even mercurial; to stomatitis and many inflammatory affections of the gums and buccal mucous membrane. It has been found curative in "nursing sore mouths," "canker in the mouth," etc. Of *Cornus circinata*, or the Green Osier, he says, "It is very popular in the country as a remedy for aphthous and ulcerated conditions of mucous membranes. It certainly has some marked specific virtues in such conditions even when chronic, for I have known it cure chronic ulcerations of the mouth and throat, recurring occasionally for many years. It acts best when used as a lotion; and also internally in appreciable doses of the tincture or infusion of the recent bark."

Dr. Wilcox, allopathist, claims to have "met with uniform success in the treatment of stomatitis materna, from an infusion of *Polygonum punctatum*, made by boiling an ounce of the leaves and tops in a pint of water, and applied to the affected part every hour through the day." Dr. Holt states that "the disease has invariably yielded, under his observation, in less than forty-eight hours, to *Kali iod.*, in material doses." Dr. Prentice says he has used the *Veronica beccabunga* successfully in these cases.

5.—INFLAMMATION OF THE SALIVARY GLANDS.

PAROTITIS, SIMPLE, SPECIFIC, AND MALIGNANT.

Parotitis is a term used to denote inflammation of the parotid and other salivary glands. The inflammation may be either *simple*, *specific*, or *malignant*.

1. Simple Parotitis is characterized by swelling, pain, and heat below and behind the ear, the pain being increased by every movement of the jaws. As the inflammation advances, there is more or less throbbing of the adjacent parts, with redness of the integuments, headache, and sometimes difficulty of deglutition and respiration, though the latter is not common. The fever which accompanies the affection is sometimes considerable, and when the inflammation is severe, there is usually some cerebral disturbance. The disease generally terminates in resolution; but occasionally the glands suppurate, forming abscesses which are often slow to heal.

2. Specific Parotitis, when idiopathic, is called *mumps*, so named because the inflammation is believed to be caused by some specific poison, or morbific agent, in the blood. It is always contagious, often endemic, and sometimes epidemic.

It is distinguished by similar symptoms to those which characterize the simple form of the affection, the chief difference being in the contagious character of the complaint, and its tendency to metastasis. When the tumefaction is the greatest, it is always extremely painful, on which account it is sometimes almost impossible to open the mouth; and occasionally deglutition is also painful, though this is not often the case, a fact which will generally serve to distinguish the affection from *paristhmitis* and *tonsillitis*. The disease generally reaches its hight in from two to four days, and then declines, running its whole course in about a week, unless complicated by a retrocession to some other organ, or by bad management. If translation takes place, it is apt to go to the testes in the male, and to the mammæ in the female; sometimes, however, the metastasis is to the brain, greatly endangering the patient's life. Sometimes the inflammation suddenly returns to the parotid, either to remain until the complaint has run its course, or else to fly back again to one of the

other organs mentioned; and this it may do two or three times before the disease terminates. The gland in this affection seldom suppurates. Generally, both parotids are affected, either simultaneously or in succession. As in other contagious diseases, those who have had the complaint once, seldom have it again, though this is not always the case. On the other hand, there are many who never have it at all, or only have it upon one side. The latter, if again exposed, are said to be just as liable to take it upon the other side, as though they had never had it upon either, but this is extremely doubtful.

There is another specific form of parotitis, which is caused by Mercury allopathically administered. It is generally attended by profuse ptyalism, swelling and sponginess of the gums, and the other symptoms eneumerated under the head of Mercurial Stomatitis.

3. Malignant Parotitis, sometimes called *Cynanche cellularis maligna*, is a gangrenous inflammation of the cellular tissue surrounding the salivary glands. According to Bæhr, who follows almost literally Schweickert's detailed description of the disease, the inflammation always starts from the lesser salivary glands, and appears to have a preference for their locality. The disease is a very rare one, especially in this country; and has hitherto been observed to occur chiefly amongst the lower classes inhabiting the low and marshy lands of Southern Germany.

Symptoms.—The disease sets in suddenly, with more or less difficulty of swallowing, aching in the lower jaw and teeth, and a feeling of stiffness in the maxillary articulation of the affected side, which is generally the right, accompanied by febrile symptoms, such as alternate chills and flashes of heat, cephalalgia, aching in the limbs, and prostration. The constitutional symptoms soon become more and more pronounced; the saliva is increased in quantity; and by the third day, or sooner, a swelling appears in the region of the submaxillary or sublingual, and sometimes, but much less frequently, of the parotid gland. The swelling is deep seated, neither very hot nor tender to the touch, but of almost stony hardness. As it increases in size, swallowing becomes more and more difficult, and the movement of the jaws almost impossible. The disease generally reaches its hight in about ten days, when, if resolution is to occur,—which, however,

very rarely takes place—the fever gradually subsides, the difficulty of swallowing slowly diminishes, the swelling becomes softer at the periphery, so as to be less sharply circumscribed, and the patient becomes more quiet, especially at night. Generally, however, the disease goes on to suppuration; and unless the pus is speedily evacuated, ichorous decomposition sets in, accompanied by gangrenous destruction of the affected parts; septicæmia, from the absorption of ichor, takes place; and the fever rapidly assumes an adynamic type, with symptoms presenting the appearance of malignant typhus. According to the authorities above-mentioned, children sometimes die as early as the third day; and in the case of adults a fatal termination may be reached between the eleventh and twentieth day. The prognosis is very unfavorable, the disease being of the most fatal character.

Treatment.—The treatment recommended by Schweickert for malignant parotitis, as given by Bæhr, is as follows:

As soon as the inflammatory swelling makes its appearance, warm poultices are applied to it without intermission; as soon as we discover a trace of fluctuation, a deep incision is made in order to secure an outlet to the ichor and to prevent its gravitating downwards. The wound has to be cleansed with water, as often as necessary, and in order to facilitate the discharge of the ichor, a horizontal posture should be maintained. In one case Schweickert gave internally *Aconitum*, *Belladonna*, *Mercurius*, *Baryta carbonica*, *Silicea*, without the least success. In three other cases he gave *Anthracin* 9th and 30th attenuation, and effected a cure in every instance. These results, says Bæhr, may perhaps be confirmed by further trials. Why *Arsenicum* was not given in the first-mentioned case, we are unable to say. For the remaining indurations *Aurum muriat.*, *Natrum* and *Silicea* were found the most efficient remedies.

For the non-malignant forms of parotitis, *Mercurius* is the chief remedy, which should be given every three or four hours in water. This is often sufficient of itself to cure, especially if the patient is careful not to take cold. In the specific form called the *mumps* it is important, to prevent metastasis, to keep the parts warm, and to avoid exposure.

If the swelling assumes an erysipelatous appearance, and especially if the patient becomes delirious or lethargic, *Bell.* or *Hyos.* should be given, but never in alternation, as they mutually antidote each other. These remedies, however, may often be advantageously alternated with *Mercurius*, which seems to be a specific against both the inflammation and the poison which causes it.

If there is *high fever*, which is seldom the case unless metastasis occurs. *Aconite* should be given, either singly, or in alternation with the remedies more specifically indicated.

If a *slow fever* sets in, the tumor becoming hard, and especially if Mercury in any form has been allopathically administered, *Carbo veg.* should be given; and if this is found insufficient, *Cocculus* will be a suitable remedy.

Should the disease shift to the testes or mammæ, *Pulsatilla* is indicated; and if other remedies are needed, *Nux vom.* may be used for the former, and *Cham.* for the latter. Obstinate cases may require one or more of the following remedies:—*Amm. carb.*, *Aurum*, *Calc. carb.*, *Dulc.*, *Hepar sulph.*, *Kali chlor. and iodat.*, *Nux v. Phytolacca, and Rhus tox.*

Clinical Observations.—Bæhr says: "The best remedy is *Mercurius.* The specific action of Mercury upon the salivary glands is well known. It not only increases the secretions of these glands, but likewise causes a real inflammation in the body of the glands which may readily terminate in suppuration, as is often seen in the violent treatment of diseases with large doses of Mercury. No remedy prevents suppuration as certainly as Mercurius."

Dr. Ruden reports the following case:—"A little girl aged five years had the mumps on both sides; *Mercurius* and *Belladonna* were given and the swelling disappeared. She was then attacked with *very severe pain across the back, in the region of the kidneys, increased by pressure or motion, accompanied by high fever, full hard pulse, red and bloated staring eyes, constipation, retention of urine, and dark coated tongue.* Various remedies were given without much relief, when *Doryphora* 6th was prescribed. One hour after the first dose the patient seemed much relieved; a copious discharge of bloody urine occurred, the bowels moved, and in nine days the child appeared quite well."

Dr. Hale reports a case in which the membranes of the brain and spinal cord became involved:—"A little girl, æt. 8, was attacked on the 23d of December with swelling of the left parotid. Three other children of the same family had the mumps at the same time, but in all the disease pursued its natural course. But in this case, on the fourth day of the disease the tumefaction suddenly subsided, and the little patient was seized with *intense pains, coming on in paroxysms, in the head and spinal column. Obstinate vomiting* set in, all food and beverage was rejected by the stomach. There was present some heat of the skin, particularly of the head and back, pulse 120, small and hard, tongue red on the edges, coated white in the centre, trembling when protruded, pupils dilated, expression of the eyes, staring, glistening and unnatural. No sleep day or night on account of pain in the head and back.

These were the symptoms for two days after the subsidence of the swelling. Her case had been under charge of Dr. A. Miller, of this city, who had administered *Belladonna, Aconite, Hyosciamus and Apis.* His prognosis was so unfavorable that I was called in consultation. I could do no more than confirm the unfavorable prognosis of my colleague, for the cases of metastasis of parotitis to the brain, have pretty generally been reported fatal.

At my suggestion, *Veratrum viride* 1-10. dil. one drop every two hours, was given in alternation with *Belladonna* 2d.

The Verat. v. has a decided influence in warding off impending inflammation of the brain and its membranes, and relieving the congestion always present in such cases.

Jan. 1. We found the patient in about the same condition as the previous day, except that the pulse was softer, and 100 per minute. The paroxysms of pain were nearly as severe, the vomiting as frequent and obstinate. The latter symptom undoubtedly produced from cerebral irritation. *Cuprum aceticum* was selected from its well known homœopathicity to such a state. One grain of the 1-10 trituration was dissolved in half a glass of water, a teaspoonful was ordered every half hour; at the end of three hours the vomiting appeared to be aggravated. The medicine was then given every three hours. Under its use the vomiting ceased in eight or ten hours. For the remaining symptoms *Zincum met.* 2d. and *Nux* 3d. were given

in alternation, and *Aconite* tincture applied liberally to the spinal column.

Under this treatment, continued for four days, the child improved rapidly, and is now convalescing finely under the use of *Phosphoric acid* and *China.*"

I have recently had a severe case of *simple parotitis*, in a scrofulous patient, which, after resisting the prolonged administration of *Mercurius iod.*, *Kali iod.*, etc., yielded speedily to the simple syrup of *Sarsaparilla*, in teaspoonful doses, three times a day.

6.—INFLAMMATION OF THE TONGUE.

GLOSSITIS.

Inflammation of the substance of the tongue is a very rare affection; but on account of the great danger arising from its excessive enlargement, and consequent encroachment upon the parts connected with respiration and deglutition, it is deemed worthy of special description. The inflammation of the mucous coat has already been described under the head of stomatitis. The present affection generally results from the free administration of mercury, and is therefore commonly associated with salivation; it may, however, be of idiopathic origin. In whatever way produced, it gives rise to the following

Symptoms.—The patient generally experiences acute pain in some portion of the tongue, most commonly the tip, which increases as the swelling progresses; this takes place rapidly, and is frequently so considerable, that the organ not only fills the cavity of the mouth, but may even extend beyond it. Articulation, and the natural motions of the tongue, are first impeded, and then entirely arrested, by the augmentation of its bulk, so that both respiration and deglutition are rendered extremely difficult. The pressure also irritates the larynx, producing a distressing cough; and, by impeding the flow of blood to and from the head, causes a fullness of the veins of the face and neck, throbbing of the arteries, protrusion of the eyeballs, and, in fact, just such an appearance as would be caused by strangulation. The tongue is usually red and dry, or else moist, and covered with a thick yellowish fur. The pulse is generally strong, full and quick, in the earlier stages; but as the disease progresses, it becomes

small, feeble, and sometimes intermittent. The skin, which at first is hot and dry, at length becomes bedewed with moisture, and is cold and clammy. Constipation, and scanty, high-colored urine, are also attendant symptoms. At length, if treatment proves inefficient, or resolution fails to take place, the patient generally sinks from the combined effects of suffocation and exhaustion, or from gangrene. Sometimes, however, suppuration occurs, and the tongue being diminished in size by the natural or artificial evacuation of the pus, freedom of respiration and circulation is again established, and recovery gradually takes place. Suppuration is generally indicated by rigor, or a sudden coldness of the body, and by more or less diminution of the general excitement of the system.

Treatment.—Aconite should be given early, one dose in solution every hour, until five or six doses are taken. If the pain, heat and swelling still increase, or continue unabated, *Belladonna* should be given in alternation with the *Aconite*, until improvement, or a change of symptoms occurs. If no improvement sets in within thirty-six or forty-eight hours, and especially if there is much salivation, *Mercurius* should be alternated with the *Belladonna*. If rigor supervenes, and especially if there is great anxiety and despondency, or the patient is troubled with frightful fancies, *Silicea* should be given, either singly, or in alternation with *Arsenicum*. Should gangrene be threatened, *Baptisia* and *Lachesis*, either singly or in alternation, may be given; and if collapse occurs, *Arnica*, or *Arnica* and *Veratrum* in alternation, every fifteen or twenty minutes.

If an abscess forms and is deep seated, no time should be lost in making an incision for the escape of the pus, taking care to avoid the larger vessels. If sufficiently free, it will also permit the escape of infiltrated serum and blood, which will so far aid in diminishing the bulk of the organ as greatly to promote recovery.

Therapeutic Indications.—*Aconite.*—Piercing and tingling pains in the tongue, with burning and swelling; ptyalism, with stitches in the tongue; face swollen, red and hot, with quick pulse; choking with inability to swallow; constipation, and scanty, high-colored urine.

Arnica.—Tongue coated and swollen; fetid, putrid smell from the mouth; constipation, with scanty, high-colored urine; general sinking of strength.

Arsenicum.—Tongue brown or blackish, with an intolerable fetor from the mouth; pulse small and trembling, or weak and intermittent; extremities cold, and covered with a clammy moisture.

Baptisia tinct.—Tongue covered with a thick yellow or yellowish-brown coat, and thick and swollen; filthy taste and fetid odor; profuse flow of saliva; frequent ineffectual efforts to swallow; face flushed and hot, with distention of its vessels; constipation, and scanty, high-colored urine.

Belladonna.—Inflammatory swelling of the tongue, which is red, hot and dry, or coated with a slimy secretion; excessive ptyalism, with great soreness; choking, with inability to swallow; protrusion of the eyes, with red and bloated condition of the face; suppression of stool and urine. Indicated after Aconite.

Lachesis.—Great swelling of the tongue, with soreness and salivation; pressure in the throat, inducing cough; thick yellowish coating of the tongue; difficulty of speech and deglutition; tendency to gangrene.

Mercurius.—Inflammatory swelling of the tongue, with complete loss of speech, and sense of impending suffocation; putrid taste in the mouth, with ptyalism; feverish heat and redness of the face; great restlessness; coldness of the hands and feet; constipation, and scanty, dark-red urine; cold, clammy, sinking condition of the system.

Silicea.—Tongue dry, or coated with a slimy mucus; swollen and numb; difficult deglutition; rigor and suppuration; anxiety and despondency.

Veratrum.—Tongue coated yellow, or dry, blackish and stiff; speechless; ptyalism; collapse of the system.

Clinical Observations.—Ruddock recommends *Aconitum* and *Mercurius* in alternation every hour, for *non-mercurial* glossitis, till relief is obtained. If the disease be due to large doses of Mercury, *Belladonna*, he says, should be alternated with *Hepar sulphur.* If there be much œdematous swelling, he give *Apis.*

Hale recommends *Arum triphyllum* for glossitis, when the swelling is *rapid* and accompanied with prickling and burning pains. He also suggests *Kali cyan.* and *Doryphora.*

Bæhr says, "In most cases of glossitis, more particularly if the disease has an idiopathic character, *Mercurius* is the surest and most suitable remedy." He also adds, "It should not be forgotten, that Mercurius is likewise the specific remedy in cases depending upon syphilis; only in such cases it is well to administer the more powerful mercurial preparations, the corrosive sublimate or the white precipitate.

Hartmann, who recommends the second or third trituration of *Mercurius*, says, "I admit that the disease can be cured with a small dose of a higher attenuation; but in a case of so much danger, where experience and a reliable method of treatment have proved perfectly safe, mere theoretical experiments are out of place; so far as I know but few cures of glossitis have been reported by homœopathic physicians in opposition to my own statements."

Hempel remarks, "In phlegmonous glossitis, with high fever, hot and dry skin, headache, slight delirium, etc., *Aconite* in the lower preparations of the root will be found an indispensable remedy. A drop of the tincture or a few drops of the first decimal attenuation, in half a tumblerful of water, the medicine to be repeated every hour or even half hour, will be found the proper dose."

7.—CANCER OF THE TONGUE.

Cancerous and cancroid diseases of the tongue occur with sufficient frequency to merit description. Though most common in old people, they are sometimes observed in the young. They usually commence with tubercles, or fissures, or as an induration in the body of the organ. When the disease appears in the form of a tubercle, or wart, it is hard, flat, inelastic, more or less puckered, and of a dark, purplish color; and is generally situated towards the anterior lateral part of the tongue. The tubercle, and likewise the fissure (which from the beginning has an indurated base), gradually runs

into ulceration, the resulting excavation becoming deep, uneven and foul, with thick, rugged sides, and a broadly indurated base. As the disease progresses the surrounding structures become implicated; profuse salivation, attended with an intolerably fetid breath, ensues; the patient is tormented with sharp, lancinating pains; the neighboring lymphatic glands swell; cachexy and hemorrhages supervene, and the patient at last dies from the conjoined effect of irritation, exhaustion, and constitutional poisoning. The majority of cases, however, are of a cancroid nature, and may be successfully extirpated; in other cases they present all the characters of true scirrhus; but occasionally they assume an encephaloid character, the disease commencing in a fungous excrescence at the side of the tongue and rapidly spreading over the surface.

TREATMENT.—We confess that we have but little faith in constitutional treatment in cancerous diseases. Nevertheless, we are obliged to admit that we did once succeed in curing a case of true scirrhus of the breast, at least it was so pronounced by three eminent surgeons, and it was not wanting in any of the characters of true scirrhus. The history of the case is as follows: The patient, a Mrs. Dingler, of Greene county, O., consulted me in June, 1862, with reference to a hard, painful tumor, situated a little to the inner side of the left nipple, which was slightly retracted. The tumor, which was about the size of a hickory-nut, was of stony hardness, and the surrounding integuments were distinctly puckered. Although I was the family physician, for some reason I was not consulted until the morning of my departure for the army; and as this admitted of no delay, I advised the patient, before having it excised, as the surgeons she had already consulted had recommended, to procure a gallon of *Sarsaparilla* from the Shakers at Union village, and see what effect its steady and long-continued use would have upon it. This advice was followed, and when I next had an opportunity of seeing the patient, which was in the following January, not a trace of the disease remained. I am happy to state that there has been no return of the disease in any form. Remarkable as was this result, I find it confirmed by a parallel case that occurred in the practice of Dr. Craig, the history of which may be found in the AMERICAN OBSERVER, vol. iv, old series,

p. 443. The doctor seems to attribute the cure in his case to the application to the tumor of a strong solution of *Sal ammoniac*, but as she took *Sarsaparilla* internally, I have no doubt that was the true curative agent. We should, therefore, not despair of a cure in these cases, even by therapeutic means. The remedies entitled to the greatest confidence in these cases are the following :—*Arsenicum iod.*, *Cundurangu*, *Galium ap.*, *Lapis*, *Phytollacca*, *Sarsaparilla* and *Viburnum prunifolium.*

Surgical Treatment.—In the great majority of cases constitutional treatment will fail to arrest the progress of the disease, in which case the speedy removal of the affected structures by the knife or ligature is the only hopeful resource, and should be performed in all cases before glandular or constitutional infection sets in. The ligature is generally preferable to excision, inasmuch as the operation is not attended with any risk of hemorrhage ; but on the other hand it is open to the objection of being both painful and tedious. The first objection is removed by adopting the plan recommended by Mr. Hilton, namely, making a section of the gustatory nerve previous to the application of the ligatures. This is effected by drawing the tongue forwards, and dividing the tissues vertically for three-fourths of an inch over the hypoglossus muscle, and across the upper part of the sublingual gland, where, with a little dissection, the nerve may be exposed and divided. Having thus destroyed all sensibility in the anterior portion of the tongue, a strong silk ligature should be passed back and forth beneath the affected tissues, by means of a nævus or other suitable needle, in such a manner as, when firmly tied, to effectually strangle the morbid growth. Great swelling of the tongue, accompanied by foul breath and salivation will attend the operation, but in a few days the diseased mass, if effectually constricted, will slough away, leaving a wound that soon fills by granulation.

Clinical Observations.—Dr. Hale says of *Viburnum prunifolium*, "In vol. vi, p. 129, of the North American Journal of Homœopathy , were reported, by Dr. E. P. Fowler, two cases of *Cancer of the Tongue.* These were undoubtedly cases of malignant disease of the tongue. They were cured by the use of a decoction of the bark, used topically."

The following case of "*Hard Nodulated Tumor of the Tongue, apparently of a Cancerous nature, which disappeared under the use of Galium aparinum*, reported by F. A. Bailey, F. R. C. S., is taken from the British Journal of Homœopathy, vol. xxiii, page 189:

Jane C—, a married woman, æt. 60, residing at Ramsbury, in Wiltshire, was admitted into the hospital April 5th, 1864, on account of a hard, firm, somewhat circumscribed tumor of about the size of a boy's marble flattened, imbedded in the substance of the tongue, on the right side, about an inch from its apex, which had been gradually increasing in size since she first observed it, five weeks before, when it was about as large as a hemp seed.

The upper surface was nodulated and uneven, and the swelling generally had the appearance and feel of a scirrhous formation in the organ. It had all along been extremely painful, so much so as entirely to prevent her sleeping at night; it was exquisitely tender to the touch when handled, and latterly she had experienced a throbbing, beating pain in it, which had induced her to think it was about to burst. There was no appearance of its having been caused by injury to the tongue through a decayed tooth. She had always been in the habit of living tolerably well, but had been suffering a good deal from general debility and languor for some time before the commencement of the swelling. Her countenance did not indicate any peculiar cachectic condition of the system, and there was no history of any hereditary cancerous taint in her family. The tumor had increased rather rapidly lately, and she was quite unable to masticate solid food on account of the pain it induced, which had added much to her original weakness.

She was ordered to have strong cold beef-tea frequently during the day for diet, with a pint of porter daily, and to take the following medicine:—℞. Extract Galii Aparini Solidi, two ounces; Aquæ Ad. half pound. M. ft. extract fluid. Of this extract a drachm and a half was given twice a day in a wineglassful of water. She was also ordered to use the above mixture as a warm lotion to the mouth several times during the day, keeping it in the mouth for some time during each application.

A month after her admission she had completely recovered from the languor and debility under which she had previously been suffering; her face, instead of being pallid and sallow, had recovered a healthy and somewhat florid appearance, which was natural to her; the pain in the tumor had been gradually diminishing, and the tumor itself had become so much reduced in size as to be scarcely discernible to the touch, and as she was now able to take solid food without discomfort and with an appetite, she was at the end of five weeks discharged from the hospital. A fortnight afterwards, having continued the remedies prescribed, she presented herself as an out-patient, when it was found that the tumor had entirely disappeared, and the tongue had recovered its natural structure and appearance.

CHAPTER III.

AFFECTIONS OF THE FAUCES.

The fauces include all the parts behind the mouth which are brought into view when the tongue is depressed and the jaws widely separated; namely, the velum pendulum, the half arches, the upper part of the pharynx, the tonsils and the uvula—in other words, the parts embraced in what is usually denominated the *throat*. These parts are so closely related, in consequence of being crowded into so small a space, that notwithstanding their diversity of structure and function, they are frequently all involved in the same pathological processes.

Many terms have been used to denote inflammation of the throat, such as angina, cynanche, paracynanche, isthmitis, para-isthmitis, etc., the last of which, for the reason already stated, is most expressive of the true character of the affection; though the first is the most common term employed for this purpose, as well as the most simple.

Like the mouth, the fauces may be attacked by the *fungoid* and *apthous* forms of inflammation; but as these present nothing peculiar in this situation, and have already been sufficiently considered under the head of *stomatitis*, they will need no further description.

1.—CATARRHAL INFLAMMATION OF THE FAUCES.

ANGINA SIMPLEX; COMMON SORE THROAT.

Symptoms.—Common or catarrhal sore throat is of very frequent occurrence in moist and variable weather, especially in the spring and fall. As a rule, children are much more liable to it than adults, with whom, also, it generally excites more or less symptomatic fever. The inflammation may be confined to the mucous membrane of the fauces, or may extend into the pharynx, constituting *pharyngitis*. In the former situation the symptoms are, more or less dryness, heat, and soreness in the throat, producing a constant desire to swallow, which is always

painful. When the inflammation involves the posterior nares, it gives rise to repeated sneezing, which is partially relieved by a slight nasal discharge that accompanies it. Sometimes the inflammatory irritation extends to the larynx, producing more or less hoarseness and cough.

On examining the fauces, the mucous membrane is observed to be somewhat red and swollen; while the tonsils are not unfrequently covered with patches of coagulable lymph, which if removed are soon reproduced by the inflamed follicles. A viscid, tenacious mucus is also secreted, which, by becoming partially dried by the patient's breathing through the mouth, in consequence of the closure of the nostrils, causes considerable pain in the effort to dislodge it, especially in the morning, when it is the thickest and most adherent.

When the inflammation is seated in the lining membrane of the pharynx, the symptoms are not materially different from those just mentioned. The inflammation and soreness are felt to be somewhat lower down, opposite the upper cervical vertebræ, with tenderness on pressure behind the larynx, and painful deglutition.

When the inflammation is more severe, the parenchyma of the tonsils is apt to become involved, causing them to swell up, and, by producing the sensation of a lump or plug in the throat, increasing the dysphasia, and greatly annoying the patient. Sometimes the difficulty of swallowing increases to such an extent that the liquid returns by the nose, and every attempt at deglutition is attended with extreme suffering, and sometimes with a sense of suffocation. In such severe cases even adults have more or less fever, often of a continuous character, attended with headache, foul breath, nausea, and even vomiting. In children these symptoms are seldom wanting, the cerebral symptoms being most intense, especially toward evening, when their violence is so great as not unfrequently to cause great anxiety, the parents fearing an attack of inflammation of the brain. Bæhr says there is but one certain diagnostic sign in these cases, which is the copious sweat that is scarcely ever wanting in this disease, and which always breaks out if the patients are covered ever so little, sometimes if they are not covered at all, and which is never wanting if the patients are sleeping. The little patient complains much more frequently of pain in the ears and in the pit of the stomach than of

pain in the throat; the former sometimes increasing to such a degree as to cause an almost constant tossing about and moaning. As in other forms of irritative fever, the appetite is generally greatly impaired, and the bowels more or less constipated.

Etiology.—Whatever tends to produce congestion of the fauces favors inflammation of the throat; hence the most frequent cause is exposure of the body, and especially of the neck and feet, to cold and damp, particularly during cold, windy, damp and variable weather; sitting in currents of air, especially when in a state of perspiration or exhaustion; or suffering any part of the body, and particularly the feet, to become cold and chilled for want of proper clothing or exercise. Care should be taken, therefore, not only to avoid such exposures, but to make such changes of clothing as the various seasons and states of the weather demand, especially in the case of children; as negligence in this particular is a fruitful source of serious throat and lung complaints.

Treatment.—The leading remedies for catarrhal angina are *Mercurius* and *Belladonna*. These two medicines can safely be relied upon to effect a cure unless the sub-mucous tissues have become involved, and even then they will greatly promote resolution. If, however, the parenchyma of the tonsils is implicated, *Baryta carb.* is the best remedy, and should be promptly given. These remarks apply especially to children, in whom susceptibility to both the disease and the remedy is much greater than in adults. In older patients, and especially in oft-recurring cases, a congested state of the mucous membrane is apt to remain, which will necessitate further treatment.

Therapeutic Indications.—*Aconite.*—Fever, with flushed face, thirst, difficulty of breathing, redness, heat, dryness and roughness of the affected parts, hoarseness, sensation of choking, with pain and difficulty in swallowing.

Belladonna.—Dryness and burning in the throat, with feeling of constriction, difficulty in deglutition, and constant desire to swallow; deep redness of the throat, with or without swelling; headache, with fever, and redness of the face; sore, raw feeling of the throat, as if it had been scraped.

Baryta carb.—Stinging sensation in the throat when swallowing; roughness and rawness in the throat, worse after swallowing; swelling

of the tonsils, especially of the left; feeling of fulness or choking, with tenderness of the neck when touched. In cases where *Mercurius* and *Belladonna* are found to be insufficient; and also for chronic disposition to inflammation of the throat.

Chamomilla.—Sore throat of children, especially when accompanied by swelling, hoarseness, painful deglutition, irritation of the larynx which provokes cough, great restlessness, sense of constriction of the throat, or of fulness, causing difficulty of breathing, or inability to lie down, with feeling of suffocation.

Dulcamara —Sore throat, with feeling of pressure or fulness. When caused by dampness or by getting wet.

Hydrastis.—Tingling and smarting in the throat, with rawness, and pain in swallowing; constant hawking of tenacious mucus. Also useful as a local application.

Lachesis.—Dryness, with burning and feeling of excoriation in the throat; sensation of a lump in the throat, causing a constant disposition to swallow; swelling of the tonsils, especially of the left; difficult deglutition; regurgitation of liquids through the nostrils. This remedy is often very useful after *Belladonna* and *Mercurius.*

Mercurius.—Dryness, swelling, and burning of the affected parts, with or without shooting pains; constant desire to swallow; fever, with violent thirst; perspiration of the head and face, affording no relief; sensation of a lump in the throat, with great difficulty of swallowing, especially of liquids, which sometimes escape through the nostrils; sense of impending suffocation, especially at night. Generally most useful at the commencement of the disease, either singly, or in alternation with *Aconite* or *Belladonna.*

Pulsatilla —Swelling and constriction of the throat, with shooting pains and soreness; redness and dryness of the affected parts, with little or no thirst; tenacious mucus in the throat, especially in the morning; aggravation of the symptoms towards evening. Especially suited to females, and persons of mild, phlegmatic temperament.

Clinical Observations. — There is no more reliable and efficient remedy known for catarrhal angina, especially when attended with hoarseness and laryngeal cough, than *Arum dracontium.* —Hart.

Dr. Bayes reports a case illustrating the selection of the remedy by the characteristic symptom, cured by *Belladonna* followed by *Pulsatilla*, the latter for the choking sensation that remained after the removal of the soreness by the Belladonna.

Dr. Stokes says that a few crystals of the *chlorate* or *nitrate of potassa*, dissolved in the mouth when the symptoms first set in, will generally cure at once.

Hahnemann recommends *Belladonna* for sore throat, when the "fauces and pharynx are deep red, soft palate and tonsils swollen; swallowing painful, particularly of fluids; speech thick; feels as if there was a lump in the throat, which induces hawking; the throat is swollen outside, and sensitive to the touch."

Dr. Hills gives *Phosphorus* in cases attended with the "sensation as if cotton was in the throat day and night."

Dr. Burt says "a dry pharynx, with dysphagia and frequent inclination to swallow, calls for *Cimicifuga*."

Dr. Guernsey says, "If you ever have a patient who can swallow nothing but liquids, give him *Baptisia*."

Dr. Hale says of *Pulsatilla Nutt*, "I have known the most happy results follow its use in catarrhal angina, when the fauces and pharynx, as far as can be seen, are of a purplish or livid color, puffy, and the seat of stinging pains."

Bæhr says, "In its ordinary form there is no better remedy for catarrhal angina than *Belladonna*; when given every two or three hours, not too high, it hushes in twelve to twenty-four hours the most violent pains in the throat, removes the febrile and congestive symptoms, and leaves mostly only a little lassitude and an impaired appetite. This effect of Belladonna is almost constant among children, who are sometimes seen in the morning jumping about bright and cheerful, even if they seemed deathly sick the evening previous.

"In older persons, where the angina exists seldom as an idiopathic affection, Belladonna only removes the pain in the throat, whereas the other symptoms which correspond to the catarrhal process, remain unchanged, and require the remedies indicated by them."

Hartmann gives the following indications for *Pulsatilla*:—"The throat is dark red, some of the vessels being engorged and very prom-

inent; the general disturbance is not very violent, but violent earache and tearing, darting pains in the cervical muscles are generally present."

Hyoscyamus, according to Dr. Hills, is indicated for "dryness of the throat with inability to swallow liquids."

Dr. Guernsey recommends *Lachesis* for "diseases of the throat that commence on the left side, or in which the pain on swallowing goes up into the left ear, the course of the pain being along the parotid gland externally."

Dr. Ward, describing an epidemic of pharyngitis which prevailed in 1867, says:—"More than fifty cases fell under my notice during its prevalence, presenting a great similarity of symptoms. *Lachesis* in the 5th, 12th, 15th and 30th attenuations, was the only remedy administered, and it never failed to afford almost instant relief The characteristic symptoms were rawness, stricture, and choking, generally preceded by chills, nausea and vomiting, followed by high fever. In most cases a single dose of the remedy afforded relief."

2.—PARENCHYMATOUS INFLAMMATION OF THE FAUCES.

ANGINA TONSILLARIS; TONSILLITIS; AMYGDALITIS; QUINSY.

Under this head we shall, for the sake of convenience, include all deep-seated inflammations of the throat, whether simple or phlegmonous. As the tonsils are most affected in these cases, it is customary to call the disease *tonsillitis*, or inflammation of the tonsils; but we prefer the common name *quinsy*, as being more applicable to the various structures involved in the inflammation.

This form of inflammation, though frequently originating in the tonsils, is seldom limited to those organs, but generally spreads to the surrounding tissues, constituting the affection under consideration. It is only when it ceases to be superficial, and involves the parenchyma, that it is entitled to the name quinsy; so long as the inflammation is confined to the mucous coat, it belongs to the simple form already described.

Symptoms.—The disease generally announces itself by some uneasiness and difficulty in swallowing, with a sense of heat and fulness

in the fauces, accompanied with dryness, and a feeling of constriction, as though there was something there which needed to be dislodged. On examination the parts are found to be red and swollen, one of the tonsils being usually larger than the other. As the inflammation progresses the tonsils continue to swell, and the difficulty of swallowing increases, until in many cases liquids regurgitate through the nose, and deglutition becomes almost, if not quite, impossible. The dryness is now succeeded by a copious secretion of viscid, ropy mucus, which adheres so closely as greatly to annoy the patient, and leads to constant and painful efforts to remove it by swallowing, or by hawking and spitting; but as the pain at this stage is great, whenever any movement of the affected parts is made, the patient frequently allows it to dribble out of his half-open mouth. The pain occasionally extends along the Eustachian tubes to the ears, which is said to be of importance as a sign of suppuration, or abscess. The voice becomes altered, assuming more or less of a nasal sound; and is often sufficiently peculiar to alone characterize the disease.

The enlargement may continue until it produces not only extreme dysphagia, but more or less dyspnœa, in which case it almost always ends in abscess. The suppuration is generally limited to one tonsil, the other undergoing resolution. Sometimes, however, both tonsils gather, either simultaneously or in succession, and after producing much local suffering, sleeplessness, and high fever, at last burst, giving instant and complete relief. The discharge is generally so small as not to attract special attention; but sometimes it is so copious and fetid as to nauseate the stomach, and even produce retching and vomiting.

Abscesses also occasionally form in the velum, the uvula, and the posterior wall of the pharynx. The latter, called retro-pharyngeal, is the most important. In these cases there is sometimes the most distressing dyspnœa, from pressure on the larynx, together with loss of voice, inability to swallow, and pain and tenderness in the pharyngeal region. Abscess in this situation is said to occur most frequently in children under seven years of age.

Repeated attacks of quinsy are apt to leave the tonsils in an enlarged, or hypertrophied, and indurated state, especially in scrofulous subjects, though this condition sometimes results from a chronic in-

flammation of the parts, unattended by any acute symptoms. Sometimes this chronic enlargement is so great as to cause serious inconvenience, producing more or less alteration of the voice, difficulty of swallowing and irritation, congesting the neighboring parts, and, by irritating the glottis and larynx, inducing a dry and hacking cough, which tends still further to confirm the throat affection. The inflammation in these cases, though of a low and chronic character, is liable sooner or later to spread both upward and downward, giving rise on the one hand to nasal catarrh, and on the other to laryngitis and bronchitis, all generally of a chronic character.

Etiology.—Quinsy is just as much a catarrhal affection as the simple or erythematous form of angina, inasmuch as it is always caused by exposure to cold or damp. We also find in these cases a similar predisposition to "take cold," but why the same influences always cause a simple angina in some cases and the parenchymatous form in others, is not so clear. It is certain, however, that one attack of quinsy predisposes the patient to another; and that those who live in damp, gloomy, and badly ventilated dwellings are most subject to relapses. Tonsillitis is a frequent complication of other diseases, especially scarlatina and diphtheria.

Treatment.—*Belladonna*, *Mercurius* and *Baryta carb.* are specifics in this disease, and if properly and timely given will almost always prevent suppuration, a result seldom obtained by allopathic treatment, even when the most "heroic" remedies are employed. Belladonna, however, is only suitable at the commencement of the disease, or before the inflammatory engorgement becomes extreme. When this state occurs Mercurius is generally indicated, and will, if the process is not too far advanced, prevent the formation of an abscess, although, if the symptoms are very acute, Baryta is generally the most reliable remedy.

Therapeutic Indications.—*Belladonna.*—Inflammatory redness of the fauces, including the uvula, tonsils and velum palati, with or without swelling; shooting, stabbing pains in the throat, constant disposition to swallow, and difficult deglutition. Fever, cerebral congestion, etc., are additional indications, but only at the commencement of the disease, as Belladonna is seldom of any great use after the first forty-eight hours have elapsed.

Baryta carb.—Dryness and rawness of the fauces, with or without swelling; painful stitches or shooting pains on swallowing or attempting to swallow; alternate chills and heat; great swelling of the tonsils, with obstructions to speech and deglutition. If given early this remedy will almost always disperse the engorgement and prevent suppuration. It is also of great service when the angina lingers or remains stationary; also after it has become chronic.

Hepar sulph.—Great swelling of the tonsils, with difficult or impossible deglutition; sensation of a plug in the throat, with violent pressure, lancinating pains, and a feeling of impending suffocation. Given sufficiently early this remedy will often prevent suppuration, but is inferior in this respect to Baryta. It is of the greatest use in cases where an abscess is about forming and we wish to hasten the process.

Lachesis.—Great swelling of the tonsils, associated with considerable swelling of the outer neck, obstructed deglutition, and a livid redness of the fauces. Most useful in lingering or stationary cases, in which the left tonsil is most affected, and in which Belladonna and Mercurius are indicated but have proved insufficient.

Mercurius.—Inflammatory swelling of the fauces in which the tonsils are specially involved, and of a deep red or bluish color; copious accumulation of tenacious saliva; fetid breath; ulcers on the tonsils or sides of the mouth; shooting pains on swallowing; difficult deglutition; swelling of the gums and tongue; disagreeable taste; profuse perspirations and nightly exacerbations. This remedy is generally most useful after the pains have been abated by the administration of Belladonna; but if the case is not seen at the very outset, it may very properly be alternated with the latter remedy.

Phytolacca.—Chills alternating with fever, and attended with great weakness; pain in the throat, extending to the ears; aching in the back, neck, head and limbs; ulceration of the tonsils and fauces, with greyish-white sloughs and little or no fetor of the breath. This remedy is specially adapted to the ulcerative form of the disease, and in large doses may be regarded as specific; it is also suited to the suppurative process.

Auxiliary Treatment.—Local treatment is seldom required, provided the case has been subjected to homœopathic treatment from

the beginning. Some practitioners, however, recommend the local application of ice, by sucking, from the very commencement. Used in this way it will without doubt materially lessen the inflammation and abate the pain ; it is also useful in checking the secretion of mucus, the adhesiveness of which renders it very annoying to the patient, and difficult to dislodge. Others prefer the steam of hot water, which serves both to clear the throat and promote resolution ; it also favors suppuration in case that process is impending. This application is best made by means of the steam atomizer represented in Pl. IV, Fig. 3. In most cases, a warm milk-and-water gargle, by clearing the throat of the tenacious mucus, and by acting as a mild fomentation, will be found both useful and soothing. Water compresses, poultices, gargles of chlorate of potash, etc., are also recommended, and may be used according to the judgment of the practitioner.

Clinical Observations. — "Dr. Ransford states that he has found *Baryta carb.* of the most signal service in Angina Tonsillaris. Its action is said to be more prompt than that of either *Bell.*, *Apis*, or *Merc. sol.* Dr. Harvey also writes that he has seen this remedy of great use in chronic glandular swelling, and also in Acute Tonsillitis of the left side. The dilutions found most serviceable are the 6th and 12th."

Hartmann says of *Ignatia*, "The following symptoms of angina are characteristic of Ignatia, as has already been stated by Hahnemann in his remarks on this drug : Stinging in the throat between the acts of deglutition ; sensation when swallowing as if the patient were swallowing over a bone, with a rolling sound ; sensation of a plug or tumor in the throat, only between the acts of deglutition. Ignatia will never prove useful if the stinging is only felt during deglutition, but very certainly when the stinging is felt between the acts of deglutition, or when it passes off by continuing the act of swallowing ; of course the other symptoms must likewise correspond to Ignatia. On looking at the buccal cavity the fauces look inflamed and red, the tonsils are swollen and inflamed, covered with small ulcers. Another kind of angina, which also yields to Ignatia, consists in a painful soreness of the throat, which is only felt during deglutition ; or in the sensation when swallowing as if a tumor had formed in the throat which hurts

when swallowing. The sensation of a swelling in the throat, with painful soreness during deglutition, is therefore a chief criterion for the use of Ignatia."

Dr Hughes says of *Hepar sulph.* that it is particularly indicated in "strumous enlargement of glands, especially where these can only be cured through suppuration, especially the tonsils."

Dr. Burt says: "To arrest suppuration of the tonsils, nothing can equal *Mercurius cor.*, first decimal trituration, applied locally with a camel's hair brush; two or three applications will cure it in half a day. Its action is so quick that no physician will believe it until he tries it for himself. I have cured them in two hours when suppuration seemed inevitable."

Apis mel.—Dr. Guernsey's indications are: "Red and highly inflamed tonsils; dryness of the mouth and throat, with stinging, burning pain when swallowing."

Dr. Ruddock lays down the following indications for treatment:

Aconitum.—Feverishness, headache, dizziness and restlessness; stinging, pricking fulness, or even choking, the throat looking as if scorched.

Belladonna.—Bright redness and rawness of the affected parts; flushed face, glistening of the eye, headache, and pain and difficulty in swallowing. Belladonna may follow or be alternated with Aconite.

Hepar sulph.—When matter has formed. It is especially useful in the scrofulous, in constitutions injured by *Mercury*, and when a liability to the disease has become established. Given sufficiently early it often prevents suppuration.

Mercurius iod.—Swollen throat; copious accumulation of saliva; swelling of the gums and of the tongue; shooting pain on swallowing; a disagreeable taste; fetid breath; ulcers on the side of the mouth; pains from the throat extending to the ear. Profuse perspiration, and nightly exacerbations, also point to *Merc. iod.* *Merc. cyan.* is also promptly curative.

Baryta carb.—If given early, before suppuration can supervene, this remedy is said to disperse the engorgement; it is also useful in chronic Tonsillitis.

Lachesis.—Where the left tonsil is affected, and the mucous membrane is of a livid color, etc.

Arsenicum.—Severe attacks, with much general *prostration*, the tonsils becoming putrid or gangrenous.

Nux vom., or *Pulsatilla*, when *gastric* derangements cause, or are associated with, quinsy.

Bæhr discriminates as follows :—In angina tonsillaris *Belladonna* is only suitable at the commencement of the disease, and in a form of angina which can scarcely be distinguished from angina catarrhalis. In general, however, it is scarcely possible in practice to establish a strict difference between these two forms of angina, nor is this essential to successful treatment. The darker the redness of the fauces, the more marked a bluish tint, the more considerable the imflammatory swelling, the less is Belladonna suitable; and even the presence of cerebral symptoms would no longer justify its use. The presence of such symptoms might tempt us to continue the exhibition of Belladonna, for the reason that we attach more importance to the congestive symptoms than they really merit. In many cases Belladonna will suffice to control the disease and prevent suppuration ; this result ought to be obtained, however, in forty-eight hours at the longest, otherwise we cannot depend upon it. In other cases the febrile symptoms disappear, but the tonsils remain red and swollen ; in such cases the continued use of Belladonna would only involve a loss of time, for we should miss the favorable moment of preventing exudation. In the acute paroxysms of the chronic form, Belladonna removes with certainty the pain and the vascular engorgement, and in milder attacks suffices to restore the tonsils to the former condition. In view of the certainty with which we can cure an angina, in a comparatively short period, it is to be regretted that a physician is not called to such a case at the very commencement of the attack, when the suitable period for the efficient exhibition of Belladonna is not yet passed. Persons who are liable to attacks of amygdalitis should be recommended to keep a vial of the proper medicine on hand, with a view of using it as soon as they begin to experience the symptoms of the trouble.

Mercurius will rarely be suitable at the onset of the disease, unless it should be accompanied by violent catarrh of the buccal cavity, or originate in it. Usually, however, the physician is not called till the inflammatory swelling has reached a higher degree, in

which case Mercurius is generally indicated. The more particular phenomena which indicate this remedy are: The whole of the fauces have a deep red or a bluish-red tint, more particularly the tonsils, which are darker than any other part, and usually show small ulcers, with pseudo-membranous exudations. The saliva is very tenacious and slimy, obliges the patient to swallow frequently, and the buccal cavity exhibits the symptoms of a highly developed catarrh. The breath has a peculiar foul odor. The pains are generally less than when Belladonna is indicated, but the general health is worse. All those symptoms are present of which we can say with positive certainty that they precede suppuration. Generally, however, unless the process is too far advanced, we succeed in preventing the formation of an abscess. The most suitable preparation of Mercurius is the Mercurius solubilis in one of the lower triturations, frequently repeated. It should not be given up too soon if no striking improvement sets in all at once, or the disease seems to increase in intensity, for not unfrequently the symptoms threatening suppuration recede, although this result seemed unavoidable.

Hepar sulphuris calcareum is the most important remedy next to Mercurius; that is to say, Hepar may be given when an abscess is evidently on the point of forming and we simply desire to hasten the suppurative process and the breaking of the abscess. The abscess is generally seen in one tonsil as a roundish prominence reaching beyond the swelling, having sometimes a dark and sometimes a lighter color. Sometimes, however, it is impossible to determine, in the misshapen, flabby swelling formed by the tonsils, the exact spot of the abscess, which not unfrequently is located entirely on the side of the pharynx. Sometimes there are several abscesses, each abscess being small. In this case the morbid symptoms continue for a longer period, because the abscesses discharge only little by little. That Hepar exerts an influence over the suppurative process and the emptying of the abscess, is evident from the fact that under its use the disease scarcely ever lasts eight days, which is the common duration under any other treatment.

Phytolacca.—Dr. G. C. Brown says: "I have been experimenting a little with Phytolacca in enlarged tonsils, and so far have found it very beneficial. In two cases they were so much enlarged as to

materially interfere with deglutition, and had surface ulcers; were speedily reduced by the use of Phytolacca, a few drops of the tincture in a tumbler of water; teaspoonful every two hours."

Baryta iod.—Dr. Hale says he has prescribed this remedy in *hypertrophy of the tonsils* with very gratifying results. It effected, he says, a rapid diminution in the size of the glands, even when they had been indurated for some years. The same writer also says, "I have been informed, by intelligent persons, that they have been permanently cured of recurring quinsy by a gargle of *Sanguinaria canadensis*. Upon testing it in practice I found it quite equal to Hepar sulphuris in its power of preventing attacks of tonsillitis."

3.—ULCERATIVE INFLAMMATION OF THE FAUCES.

The preliminary remarks made under the head of ulcerative stomatitis are equally applicable to ulcerated sore throat, the principal varieties of which are, (1) the simple, (2) the syphilitic, (3) the mercurial, and (4) the gangrenous or phagedenic.

As before stated, any form of inflammation of the mucous surfaces may occasionally be attended with ulceration; but the affections here referred to are those of which ulceration is a leading and characteristic feature, and distinguishes them from every other form of disease. It is highly probable that these cases all have their origin, either near or remote, in some constitutional dyscrasia; but this, though of the greatest importance in a therapeutical point of view, is not always demonstrable.

1.—Simple Ulcerated Sore Throat.—The most prominent symptom of this disease is a sharp, sticking pain in the region of the fauces, which is greatly increased whenever an attempt is made to swallow. On examining the throat, one or more whitish spots are seen, surrounded by an inflamed border. These spots sometimes increase considerably in size, while at other times they remain almost stationary. After a time they throw off the whitish coat, bringing into view somewhat irregular excavations, or ulcers, of a red and inflamed appearance, which, under proper treatment, generally soon fill up and heal. Sometimes, however, they manifest a tendency to

spread, at which times, especially, the pulse is rapid and the system feverish, whereas under ordinary circumstances they are accompanied with little or no fever.

Etiology.—As already remarked, there is reason to believe that this affection has its remote origin in some syphilitic, mercurial, or scrofulous taint of the system. Certain it is that congestion of the fauces predisposes to the complaint, and hence it is especially apt to occur during the prevalence of scarlatina, at which times children thus affected are often supposed to be laboring under that disease, minus the eruption.

2.—Syphilitic Ulceration of the Fauces.—This form of ulcerated sore throat is generally preceded by more or less fever, emaciation, and peculiarity of countenance. There is also, in many cases, pain in the limbs of a rheumatic character, soreness of the throat, and pain and difficulty in swallowing, though the latter, contrary to what might be expected, is often quite insignificant. The most common form of syphilitic ulceration of the throat rarely occurs as a solitary symptom, but is generally associated with papular eruptions on the shoulders, body, and upper extremities. The ulcer, which is generally seated in the tonsils, is small and shallow, with irregular and indented edges, and covered, apparently, with coagulable lymph. Sometimes it appears as a mere fissure at the sides or back of the tonsils, which are much swollen and congested. The uvula, also, is frequently larger and redder than common, with occasionally one or more ash-colored fissures upon its surface. Next in frequency is what is called the "excavated ulcer of the tonsil." This presents the appearance of a deep excavation, the base of which is covered with a dirty greyish exudation or coat. The margin of the ulcer is red and slightly tumid, but the ulceration is accompanied with very little pain; there is, however, more or less stiffness and difficulty in swallowing. This form frequently occurs as a solitary symptom, though it is sometimes met with in combination with the scaly variety of syphilitic eruption. The last form of syphilitic ulceration of the throat which we shall notice is the phagedenic. It is characterized by high fever and great pain and difficulty in swallowing from the very commencement. It first appears as a small aphthous-looking spot upon the mucous membrane, generally the velum,

surrounded by an intense erysipelatous redness. The ulcer spreads rapidly, until it involves all the neighboring structures, including the uvula, the palate, the half arches and the tonsils. Although it frequently occurs in a milder degree, it is always attended with great constitutional disturbance, which, with the violent inflammation and insomnolence, serves readily to distinguish it from the other and less acute forms.

3.—Mercurial Ulceration of the Fauces.—This is a much more frequent form of ulceration of the throat than is commonly supposed. When mercury is administered to persons of feeble constitutions, especially children and women, it is apt to produce erysipelatous inflammation of the fauces, which is generally accompanied with more or less superficial ulceration of the tonsils and neighboring parts, and sometimes extends over the entire palate. If in these cases the further administration of the mercurial is continued, the ulcerations almost always become gangrenous, fever of an adynamic type is induced, and more or less sloughing and debility also supervene. Sometimes the disease commits the greatest ravages, the sloughing process predominating, and causing a condition similar to what is known as "putrid sore throat." This condition, however, is happily far less common than formerly, when mercury, under allopathic administration, was so recklessly given.

4.—Gangrenous Ulceration of the Fauces.—As we have just seen, gangrenous ulceration of the throat is sometimes caused by the injudicious use of mercury, but it also occurs as an idiopathic affection; or rather, inflammation of the fauces, in weak and ill-conditioned states of the system, sometimes assumes the form of gangrenous ulceration. Whether it is entitled to be regarded as a distinct disease is very doubtful, since gangrene occasionally attends every form of inflammation of the fauces, as in quinsy, diphtheria, and scarlet fever. The causes and characteristic symptoms have already been given under the head of gangrenous stomatitis, which see.

Treatment.—Ulceration of the throat indicates one of two conditions, either a high state of inflammation or an impoverished and ill-conditioned state of the system. The first calls for *rest*, as absolute as it can be made. The second requires good nourishment, suitable

ventilation, healthful location, proper clothing, and such other hygienic measures as are calculated to invigorate the general health.

If the accompanying inflammation is acute, the wet compress, if applied sufficiently early, will be found an important adjuvant. If the ulceration is attended with a foul odor, or a putrid state of the breath, a gargle containing a small quantity of the fluid extract of *Baptisia*, of a glycerole of *Muriatic* or *Salicylic acid*, or of a solution of *Kali chloricum*, will often be of great benefit.

Therapeutic Indications.—*Baptisia.*—Pain at the root of the tongue when swallowing; large accumulation of viscid mucus; rawness and soreness of the throat, with burning and scraping, inflamed and ulcerated state of the mucous membrane of the fauces, and a foul breath.

Belladonna.—Burning and stitching pain in the throat, which is red and more or less swollen; redness and puffiness of the face, with fever and headache; rapidly spreading ulcers in the throat, accompanied by painful and difficult deglutition.

Capsicum.—High fever with thirst, or chill followed by heat, with pain and constriction in the throat, and ill-conditioned ulcers. Especially useful in ulcerated sore throat when there is a tendency to gangrene.

Hydrastis.—Sticking and smarting pains in the throat, with rawness, and increased pain on swallowing; bad taste in the mouth; inability to speak or swallow; ulcers in the mouth and throat.

Mercurius.—Burning and shooting pains in the fauces, with constant desire to swallow; sensation of something sticking in the throat; slow-spreading ulcers; pain extending to the ears; perspiration of the head and face, affording no relief; violent thirst.

Phytolacca.—Redness and soreness of the fauces, with feeling of warmth and excoriation; high fever with headache; difficult, almost impossible deglutition; stitching pains at the root of the tongue, caused by ulcerations in the throat.

Aurum.—Stinging soreness in the fauces only during the act of swallowing; putrid odor of the breath accompanying ulceration of the throat. Especially adapted to syphilitic cases.

Argentum nit.—Gangrenous ulceration of the throat, with foul breath, and ulcerative pain, especially on the right side; sensation as if a splinter was lodged in the throat; dark, bluish redness of the uvula and fauces, with great pain and difficulty in swallowing. Suited to low types of ulceration and inflammation.

Acid nit.—Soreness of the throat, with burning and stinging pains, as if ulcerated; soreness, pain and difficulty in swallowing, as though raw and swollen; painful ulcers in the throat, caused by syphilis, or by the abuse of mercury.

Kali bichr.—Simple ulcerated sore throat, with accumulation of tenacious, adhesive, stringy matter; also syphilitic ulceration of the fauces, when the ulcers are superficial.

Kali hydriod.—Dull stinging and ulcerative pain in the fauces, only during deglutition. This is one of the best, if not *the* best, of all internal remedies for ulcerated sore throat, whether simple or specific.

Eryngium aquat.—Raw, smarting, burning sensations in the throat and larynx. This is said to be a valuable remedy in both catarrhal and syphilitic cases.

Clinical Observations.—Dr. Hale says of *Hydrastis*, "It is a favorite remedy with many physicians in the West as a gargle in cases of simple ulcerated sore throat." He also adds, "*Syphilitic angina* has been benefitted by the use of this medicine; indeed, in its action on the glands of the mucous membrane, Hydrastis is an analogue of the mercurials."

Dr. Burt recommends *Kali bich.* for "chronic ulceration and inflammation of the pharynx, especially of a syphilitic origin." In similar cases attended with ulceration of the velum, in scrofulous subjects, he recommends *Kali hydriod.*

Dr. Guernsey has great confidence in *Nux vom.* in cases where the "mouth and fauces are full of fetid ulcers."

In Jahr's collection of clinical cases, we have *Nitric acid* for ulcers in the throat, particularly from the abuse of mercury; *Lachesis* for syphilitic-mercurial ulcers in the throat, on the palate, and in the fauces, with tingling in the ulcers, desire to cough, and violent pain on swallowing, particularly hard, sweet, and sour food; *Mercurius* for ulceration of the tonsils, with sharp, stinging pains in the fauces when

swallowing; also for syphilitic ulcers in the throat; and *Thuya* for chancrous ulcers in the throat and mouth, from excessive doses of Mercury for syphilis."

Ruddock says "*Belladonna* is well adapted to ulcerated throat with bright redness, and *much pain* on swallowing; *Kali bich.* to chronic ulceration; *Argentum nit.* to ulcerated throat of a low type, with fetid breath and foul mucus, and in cachectic patients; and *Carbo veg.* to similar conditions with *hoarseness.*"

Hale says of *Sanguinaria canadensis*, "It has cured angina, and a species of pharyngitis; also *ulcerated sore throat.* I have been informed, by intelligent persons, that they have been permanently cured of recurring quinsy, with *ulceration*, by using a gargle of bloodroot. Upon testing it in practice, I found it quite equal to Hepar sulph. in its power of preventing attacks of tonsillitis; also in actual *ulcerations of the throat.* The lower dilutions were used."

Dr. Capen says, "Early this month, I had under my care a patient with the following symptoms: *Sore throat*, slightly feverish, mucous membrane *slightly excoriated;* discharge of burning fluid from nose; nose stopped up; *hoarseness* of voice. Now instead of prescribing *Aconite* and *Bell.* low, as is my habit, I found a remedy better indicated, and comparatively new and little used around here. I held on to it until a good and quick cure was performed. A colleague of mine, an old physician, had never used the remedy in all his experience. I think in throat troubles *Bell.*, and *Merc.* are too often substituted in place of the remedy that I used, which was *Arum tryphyllum* 30th."

4.—ERYSIPELATOUS INFLAMMATION OF THE FAUCES.

INTERNAL ERYSIPELAS.

Erysipelas of the fauces may be either primary or secondary. In the latter case the disease occurs in the throat in consequence of the inflammation spreading from the head and face to these parts. The lips and interior of the mouth, including the tongue, are red and dry; the fauces are inflamed; the tonsils reddened and sometimes swollen; deglutition is difficult and more or less painful; and in some rare in-

stances gastritis and enteritis have supervened, apparently from an extension of the disease to the stomach and bowels. Erysipelas of the fauces may also occur as a primary affection, the disease appearing in the throat at the same time, perhaps, that the rash appears on the skin, or on some remote part of the body. In these cases the fauces generally present a bright scarlet or crimson color, with more or less thickening and swelling of the soft palate, tonsils and uvula. In most cases, also, there is some difficulty in swallowing, and perhaps some huskiness or loss of voice, and even some croupy symptoms. At the same time there is considerable fever, of an adynamic character, with a rapid pulse and a burning hot skin. This form of erysipelas is peculiarly contagious, and is very apt to occur in hospitals and camps, or where patients are over-crowded, and deprived of a proper quantity of fresh air and of healthy nourishment. In many cases it is epidemic, attacking almost every inmate of the house, and especially the attendants of those sick with the disease. Sometimes it rages as a destructive pestilence, as when it appeared in epidemic form in 1842–3–4, in various parts of our country, and from one of its most striking symptoms was denominated the *black tongue*. In these cases the inflammation has a strong tendency to gangrene, and constitutes one of the forms of what is called "putrid sore throat." The tongue, at first covered with an ashy-gray or dirty yellow coat, soon becomes dark brown or blackish; the breath becomes intolerably fetid; the lymphatic glands and cellular tissue slough away, accompanied by an exceedingly acrid and offensive discharge, and sometimes by hemorrhage. The fever quickly lapses into the typhoid form, death sometimes taking place in two or three days, but more frequently not until the eighth or tenth day, and occasionally much later. In most cases the cutaneous eruption appears on the third or fourth day, but sometimes not earlier than the seventh or eighth. Sometimes the eruption suddenly disappears, and this is generally a very unfavorable sign. When recovery takes place, convalescence frequently occurs as early as the seventh or tenth day, as in ordinary erysipelas, but it is no uncommon thing for it to be greatly retarded.

Diagnosis.—We know of no certain way of distinguishing this affection, previous to the appearance of the cutaneous eruption, ex-

cept by a symptom first pointed out by Frank, and confirmed by Chomel and Blache, who remark in relation to it that, "Whenever a patient has exhibited, for twenty-four or forty-eight hours, an intense febrile movement, attended with *pain, swelling, and tenderness of the lymphatic glands of the neck*, we have not hesitated to announce the approaching development of erysipelas, and in no case has the diagnosis been invalidated by the result."

Treatment.—The sovereign remedy for this complaint, in all simple or non-malignant cases, is *Belladonna*. It is indicated in all primary cases, especially if there is congestion of the brain, with violent headache, delirium, or lethargy. If this remedy is not promptly curative, and especially if there is an œdematous condition of the affected parts, accompanied by hoarseness and difficulty of breathing, *Apis mel.* will probably be required. In cases of a gangrenous character, *Lachesis* and *Arsenicum* are indicated, the latter especially when there is excessive general prostration. The best local application that I have found, is a gargle consisting of one drachm of *Fl. Ext. of Hydrastis*, or the same quantity of *Muriated Tincture of Iron*, in eight ounces of water, which is rendered more agreeable to the taste by the addition of glycerine.

Clinical Observations.—The following clinical indications of remedies adapted to *gangrenous erysipelas of the fauces*, are taken from Hull's Jahr:

Acidum sulphuricum deserves special commendation for the great service it renders where there occur a sudden decline of the strength, frequent chills, pain in the throat, not very striking, with the exception of a sensation of a painful swelling, *which extends to the submaxillary glands.*

Arsenicum is undoubtedly the chief remedy. It is indicated if there be an absolute exhaustion of the strength, sudden emaciation, nocturnal febrile paroxysms, burning heat, burning face, distorted features, cold hands, and indifferent thirst; when the patient is distressed, especially at night, is in bad temper, is agitated, sleepless, tossing himself about in bed, and gnashes his teeth; where the gangrene on the part affected is quite advanced, and there exists an ulceration throwing out excessively fetid matter, which constantly increases.

The Arsenic is not only useful, but necessary, when an inflammatory and erysipelatous swelling seizes the tonsils and gullet, especially when attended, at the commencement, by a burning pain; applied at this juncture, it will prevent the transit of the erysipelatous to the gangrenous stage.

Conium maculatum is as energetic as the Arsenic, and has been employed with great success when the diseased parts have suddenly assumed an ash-gray color, and a blackish aspect; ulcerations have formed, secreting a fetid matter, without much pain; the strength, and with it the natural temperature, have suddenly declined; the spirits of the patient become anxious, indifferent and prostrated; the febrile paroxysm becomes irregular, sometimes consisting of chills and heat, then of burning fever succeeding the chills, and concluding at night with a copious perspiration; whitish eruptions appear on the skin; the face grows pale; features change, with œdema; the tongue becomes covered with a thick coat, swells, is painful, and the speech is difficult; also when the stools are diarrhœic, bloody, and involuntary.

Euphorbium has been employed with advantage, at the commencement of similar affections, when the inflammation has been erysipelatous, and when a violent, drawing, pressing pain has accompanied the strong expressions of fevers and anguish.

Capsicum is appropriate to many epidemic maladies, especially to sore throats of unfavorable forms, that pass over suddenly to a gangrenous state; these readily yield to Capsicum given twice every six hours.

5.—FOLLICULAR INFLAMMATION OF THE FAUCES.

FOLLICULAR PHARYNGITIS; CLERGYMAN'S SORE THROAT.

Although this form of inflammation of the throat is by almost universal consent denominated follicular, the name cannot always be said to be strictly appropriate, especially in the first stage, or before the follicles become involved. Since, however, the inflammation is of a chronic character, and always results in a thickening or hypertrophy of the mucous membrane, it is difficult to conceive how, in any case, the mucous follicles can remain unaffected. Regarding this view, therefore, as pathologically correct, we shall make no distinction,

other than one of degree, between those cases in which the inflammation is diffuse and apparently superficial, and those in which inflammation of the follicles is predominant.

Symptoms.—The disease generally commences with a slight irritation of the throat, the result, in most cases, of atmospheric changes, acting upon a debilitated or dyscrasic condition of the system. This irritation is at first quite transient, coming and going, with greater or less frequency, for months, and in some cases even years, before reaching a degree of intensity sufficient to excite the apprehensions of the patient. Even then the irritation may be comparatively slight, and only inconvenience the patient when he attempts to speak or sing in public, at which time there is an almost constant desire to clear the throat, by hemming and hawking, of a small quantity of very tenacious mucus. This hemming is so characteristic, that "you may set down nearly every case having this symptom, without further investigation, as one of chronic follicular pharyngitis."

In other cases, there is, in addition to the symptom just noted, a burning sensation in the throat, accompanied with a disagreeable feeling of dryness, and a constant desire to moisten the affected parts. There is also more or less huskiness of the voice, especially after speaking or singing, with frequent inclination to cough or hack. Sooner or later the uvula becomes greatly elongated, causing not only a constant desire to swallow, but, by irritating the fauces, provoking a tormenting, teazing cough, of the most obstinate character. On examining the throat, the mucous membrane is found to be more or less red and vascular, or, when the disease has lasted a long time, pale, uneven, and even warty, in consequence of the sebaceous glands being swollen and the papillæ hypertrophied. The follicles, which are swollen to about the size of a bird shot or larger, are sometimes isolated, but more frequently they appear in clusters, extending upwards to the posterior nares and downwards to the œsophagus, while in other cases the whole surface is sprinkled with enlarged follicles, giving it a more or less granular or mammillated appearance. In these cases, the mucous membrane is frequently covered with a copious secretion of transparent and adhesive mucus; or else it is opaque and glutinous, of a yellowish color, and accumulated in spots, especially between the swollen follicles and the enlarged glands. Examined with the micros-

cope, this secretion is found to be mixed with a greater or less quantity of pus cells, hyperplastic elements, and epithelial debris. Occasionally the follicular secretion becomes inspissated, and, when thrown off, has a cheesy appearance, which not unfrequently has been mistaken for tubercle. The tonsils, especially in young, lymphatic, and scrofulous subjects, become hypertrophied and indurated, causing more or less difficulty of swallowing, and stitching, pressing and shooting pains in the fauces, sometimes extending to the ears.

The disease is apt, sooner or later, to extend to the larynx. At first this organ is merely irritated, from its proximity to the epiglottis, which is always more or less inflamed; but in most cases the follicles of the larynx become inflamed at an early period. This is shown by the violent efforts frequently made to dislodge the tenacious mucus, not from the fauces, but from the larynx, by coughing. In fact, laryngitis is so constant a complication of follicular inflammation of the fauces that the disease is sometimes very properly called "follicular laryngo-pharyngitis."

Etiology.—The chief predisposing cause is a scrofulous, tuberculous, or syphilitic dyscrasia, which often remains latent in the system till developed by an acute catarrh, or some other exciting cause, such as public speaking or singing, the inspiration of air contaminated by dust or smoke, immoderate chewing or smoking, the abuse of alcoholic liquors, dyspepsia, long exposure to damp and chilly, or to overheated apartments, the abuse of caustics under the allopathic abortive treatment, etc.

Prognosis.—The prognosis is generally unfavorable, and should therefore be guarded. Not that it ever terminates fatally of itself; but it is so often complicated with laryngitis and bronchitis, on which the accompanying dyscrasia imprints its own character, that the disease cannot quickly be removed; whilst the occupations of those most subject to the affection are such as to render them unable to give the much needed rest and attention to the diseased organs. Besides, these cases seldom come under treatment until the disease has become so deeply-seated and complicated, and has made such inroads upon the constitution, to say nothing of the organic changes produced by the constant mechanical irritations caused by what has been well-

termed "scientific maltreatment," as to render the result, in many cases, more than doubtful.

Treatment.—The best local treatment in these cases, is a weak solution of the indicated remedy, applied tepid through the small atomizer figured in Pl. IV, Fig. 2. This will generally be found to be one of the anti-psorics, such as Nat. carb., Nat. mur., Baryt. carb. Hepar sulph., Magn. mur., Calc. carb., and Sulphur.

When the disease is brought on by public speaking or singing, rest of the vocal organs is often a *sine qua non*. In some cases, even a change of climate or a long journey will be necessary; and in all cases, a suitable amount of out-door exercise, with proper attention to bathing and ventilation, will be required. When the case is complicated with dyspepsia, the digestive organs should receive particular attention, the diet carefully regulated, and all highly-seasoned and indigestible articles avoided.

Therapeutic Indications.—*Argentum nit.*—Coughing produced by raising the voice, as in singing; hoarseness; internal soreness of the throat and larynx, worse in the morning; paroxysms of cough induced by fits of passion or laughing; burning and dryness of the fauces; soreness and rawness of the throat; uvula and fauces dark red; thick tenacious mucus, obliging the patient to hawk.

Belladonna.—Dryness of the palate and fauces; constant desire to swallow; difficult deglutition; dry cough, caused by irritation of the epiglottis, or by tickling in the larynx; rawness and soreness of the throat, which is red and shining.

Bromine.—Tonsils inflamed and swollen; hoarseness; swelling of the faucial mucous membrane; elongated uvula.

Causticum.—Soreness, rawness, and scraping in the throat; dryness of the fauces; sensation as if the throat was too narrow; continual swallowing; hawking of mucus with pain in throat pit; hoarseness, worse in morning and evening; cough, with involuntary discharge of urine.

Iodine.—Throat dry with frequent empty swallowing; inflammation of the throat with burning pain; salivary glands much swollen; constant hemming to clear the throat of tenacious mucus: swelling and elongation of the uvula; hoarseness lasting all day; throat feels

constricted, as if tied; cough excited by large quantities of mucus in the larynx.

Kali bich.—Burning in fauces extending to the stomach: ulcers in the fauces discharging fetid, cheesy lumps of matter; hawks copious blue mucus in the morning; hoarseness; spasmodic cough caused by tenacious mucus in the larynx.

Kali carb.—Morning accumulation of mucus in the fauces, difficult to detach by hawking.

Kali iod.—Hoarseness with pain in the chest; cough with copious green sputa; swelling and elongation of the uvula.

Lachesis.—Hoarseness with rawness and dryness of the larynx; throat feels constricted; fauces purple and swollen; uvula elongated, with the feeling of a plug in the throat, unrelieved by swallowing.

Mercurius.—Throat dry, with frequent empty swallowing, or covered with thick, tenacious mucus, obliging the patient to hawk; salivary glands much swollen.

Sanguinaria.—Dryness and burning of the fauces, extending down the œsophagus; throat looks red and shining, with a raw and sore feeling; dry cough with tickling in the throat pit.

Wyethia hel.—Dryness of the palate and fauces, with burning extending to the stomach; constant hemming to clear the throat; throat dry with frequent empty swallowing, which gives no relief; dryness of the posterior nares; swelling of mucous membrane of the fauces, with difficult deglutition; nasal passages appear obstructed, so that efforts to clear them through the throat afford no relief; increased flow of tough, ropy saliva; uvula relaxed and elongated; mucous follicles swollen, giving a granular appearance to the pharynx; dry, hacking cough, caused by tickling of the epiglottis.

Clinical Observations.—Lippe says that *Arum triphyllum* is a very important remedy in clergyman's sore throat, if the voice cannot be modulated, and there is much secretion of mucus.

Lilienthal, after stating that Hughes, in his Therapeutics, takes issue with Dr. Clifton, who recommends *Baryta carb.* for the hypertrophied tonsils, preferring *Calc. phos.* and *Merc. iod.*, and that Cook recommends the latter especially for the clergyman's sore throat, says: —"Still we would prefer the Baryta and the Phosphate of Lime, where the disease has been engrafted on a scrofulous or tubercular

dyscrasia, whereas we would think more of the Iodide of Mercury where the chronic catarrh is complicated with hereditary or acquired syphilis."

Meyhoffer says of *Mercurius iod.*, that it has been highly commended in the more acute forms of pharyngo-laryngitis follicularis, from the first to the third trituration; but although the more acute symptoms have yielded rapidly to its influence, he has never attained, by means of this salt alone, perfect absorption of the swollen follicles. "We have, however," he says, "seen *Argentum met.* master inflammation and swelling of the posterior wall and lining of the larynx, attended by a sensation of a clog in the vocal organ, with hoarseness or loss of voice, continual and vain efforts to swallow, with pain and soreness in deglutition, much hawking, considerable muco-purulent expectoration, or titillation in the larynx, with dry, spasmodic cough. We have lately used *Argentum nit.* for the same indications, finding its action more prompt (3d to 6th dilution)."

The same author also says, "The highly favorable results which have been obtained by inhalations and pharyngeal douches of pure *Carbonic acid* in follicular pharyngo-laryngitis for a long series of years in Germany, the costly edifices and machinery erected in pursuance of this method in several localities, prove sufficiently its therapeutical value in such diseases. Combined with a saline atmosphere the most inveterate follicular alteration will not resist its modifying power."

Kafka advises us to rely, in chronic catarrh of the fauces, with *dryness of the throat and a constant desire to swallow saliva* in order to moisten the parts affected, on *Sulphur* 2, two doses daily, and in long standing cases on Sulphur 30, one dose for six days and then a pause for three days. If *hoarseness* is added to the dryness, *Phosphorus* or *Magnesia mur.* may be preferable. Complication with catarrh of the Eustachian tube finds its certain remedy in *Petroleum* 3–6, two doses daily; *Alum* 6 internally and as a gargle may be administered when there are large quantities of tough phlegm in the throat, and the patient complains of a sensation as if a foreign body were there, which needs removing, and *Alumina* has also soreness, rawness, hoarseness, dryness, or a secretion of a thick, tough phlegm, worse in the afternoon and evening, and better from eating and drinking warm things.

Argentum nit., so frequently abused by the old school, gives us also a collection of thick, tough phlegm, causing gagging, wart-like excrescences, feeling of a pointed body in the throat when swallowing, belching or moving the neck, or *Kali bich.* for a ropy, stringy, fetid discharge from the posterior nares and fauces, especially when originating in old syphilis (Raue).

For follicular catarrh, Kafka recommends *Plumbum acet.*, *Iodine*, *Alum*, *Argentum nit.* especially when the mucus is tough and firm, but if instead of follicular, we have vesicular catarrh, *Clematis* ought to be preferred. Hypertrophy of the tonsils indicates *Baryta carb.* 6 or *Sepia* 6 methodically applied, or if based on a scrofulous dyscrasia, *Calcarea iod.* 6 or Silicea 6.

Chronic catarrh of the fauces, complicated with scrofulosis, needs, when the throat feels dry, according to Kafka, *Calcarea carb.*, *Sulph.*, or *Phos.*, or when there are large mucous accumulations, Kali carb., Natrum mur., or Puls. Persons obliged to use their voice constantly and assiduously, may strengthen it by the methodical use of Arnica or Argentum nit. (Lilienthal has found *Ammonium mur.* to answer this purpose), and ought to take a vacation during the summer months and pass their time in the country, where they can get good milk, whey and alkaline mineral waters. Persons using tobacco or alcoholic drinks to excess, are hardly ever cured of their catarrhs till they have the moral courage to resign entirely their weed and their stimulants. It is self-evident, that salt and spicy food aggravate the irritation and ought to be strictly interdicted.*

Hirsch's therapy of follicular angina is, in full, as follows:— "Every patient suffering from chronic nasal catarrh usually lays particular stress on one or another subjective symptom, belonging either to the anomalies of secretion or sensation. This, in conjunction with the pathological alterations found by ocular examination, gives us the cue to the corresponding specific remedy. The secretion of the morbidly affected mucous membranes may be affected qualitatively or quantitatively, and remedies from the group of alkaline and earthy salts will be found beneficial. *Natrum and Kali, Calcarea, Magnesia and Baryta* give mostly the basis, forming salts in combination with

* *Am. Obs.*, vol. vii, p. 263.

the different acids, whose specific influence on the mucous membranes of the fauces in their abnormal state has been proved beyond all doubt; the old as well as the new allopathic school apply them frequently with benefit, although unconscious of the great principle which underlies their action. At present, where the atomizing application of remedies is so fashionable, eminent physicians ascribe decided curative action to mineral waters, rich in *Natrum carb.* when applied in such a manner (*Vogler*). Waldenberg and Kœhler have also seen satisfactory results in these diseases from a weak solution of chloride of sodium, applied through the atomizer. At any rate, we of the progressive homœopathic school ought to feel pleased that atoms begin to be considered of importance by all classes of physicians. When in the atomization of liquids one drop of a very weak medicinal solution is divided into thousands of invisible and imponderable atoms, in order to act a remedial part, then it needs only one small step to become a convert to the beneficial action of dilutions, and in fact I use in cases where the carbonate of soda is indicated, either a small wine-glass full of the mineral waters of Ems, three times a day, or some middle sized globules, moistened with the sixth dilution of *Natrum carb.*, and find the same good effect from either application.

The cases peculiarly adapted to the application of Natrum carb. are those where, with a moderate hyperæmia of the mucous membrane, and the consequent anomalies of secretion, we find an exquisite tendency to rheumatic affections in the motor apparatus of the fauces, with a continual sensation of rawness and scratching in the fauces, a diminished secretion of the mucous membrane, and a vain effort to hawk up phlegm, especially when it accumulates, as is mostly the case, during the night, and can only be expectorated with great effort in the morning. The pains during deglutition or yawning testify to a rheumatic affection of the muscular fibers, which is sensibly felt in spite of the insignificant symptoms of irritation in the mucous membrane.

Natrum muriaticum gives us also catarrhal and rheumatic manifestations in chronic catarrh of the fauces; but, as in many other rheumatic affections, the rheumatic diathesis does not show itself by great pains, but rather by a transient inability of the muscles to perform their normal function, or at the utmost by a sensation of tension

during prolonged activity, so we find in these cases the motility of the muscles of deglutition encroached upon, the natural activity of the azygos appears checked, the uvula elongated, giving continually the sensation of a plug in the throat, and all the other muscles which are at work during deglutition, show a diminished action, and food may therefore become impacted in the throat, or pass the wrong way into the trachea. Increased mucous secretion is also a symptom of the kitchen salt. The physiological proving of Kali carb. gives us a similar symptomatology in reference to follicular catarrh, and it needs therefore the differential symptoms of each remedy to give us the characteristic indications. Abdominal plethora, so frequent at the middle age, will often be found associated with chronic catarrh of the fauces, and in both states alkaline and earthy salts are valuable remedies.

Children, even when suffering only from the lighter degrees of scrofulosis, are often subject to these chronic catarrhs. "Mother, I have a sore throat," is the constant complaint of such children, and mothers continually request their physicians to do something in order to eradicate the bad habit of such children, whose throats seem forever to be full of phlegm, and which they continually try to remove by hawking, especially during the morning hours. To this solitary subjective symptom very few objective ones can be added; perhaps here and there some slight redness, a somewhat puffy or shining mucous membrane, with some increased secretion, and at a later stage the submaxillary glands may be found swollen, and one or the other tonsil, or both, enlarged. I prefer in such cases the alternate methodical use of *Calcarea carb.* and *Natrum mur.*, giving one week one remedy, pause for the same length of time, to give the salt on the third week, etc.

Baryta carb., *Hepar sulph.* and *Sulphur* find also their indications, not only by the local disease, but far more in the general state of health. Either one may be indicated in simultaneous helminthiasis, whereas a peculiar nervous erethism might be quieted by *Calcarea* or *Hepar*, according as all the other symptoms correspond to the case.*

* *Ibid*, p. 260.

CHAPTER IV.

AFFECTIONS OF THE LARYNX AND TRACHEA.

Diseases of the larynx not only occur with greater frequency, but are more numerous, and, as a general rule, more important, than those of any other portion of the respiratory tract. This arises partly from its anatomical position, the larynx being situated, so to speak, at the door of the lungs; partly to the sensitiveness of its mucous lining, the exposed surface of which consists of a close network of capillary vessels; partly to its sympathetic relations as an instrument of reflex action; and partly to its complex structure and function as an organ of respiration and articulation, by reason of which minute pathological changes, which elsewhere might pass unnoticed, or be attended with but slight and transient inconvenience, frequently result in the most serious consequences, not only to the voice, but even to life itself.

Before proceeding, therefore, to the description of special laryngeal diseases, it will be well to simplify the subject by pointing out the more important and characteristic symptoms belonging to these affections, together with the causes which most frequently give rise to them. They are:

1. *Aphonia*, which results from non-approximation of the vocal cords, depending either upon swelling, or some other mechanical hindrance, or else due to paralysis of some of the muscles attached to them; as in cases of swelling of the arytenoid cartilages, tumors, cicatrizations, hysteria, pressure on the recurrent laryngeal nerves, etc.

2. *Dysphonia*, resulting from alteration in the vocal cords from inflammation, ulceration, thickening, morbid growths, diminished tension, etc.; as in cases of acute and chronic laryngitis, laryngeal phthisis, papillomata, etc.

3. *Cough*, resulting from irritation of the laryngeal mucous membrane, or the nerves of the larynx, as met with in most laryngeal dis-

eases; it is easily distinguished by its peculiar shrill, brazen character, as in croup.

4. *Dyspnœa*, from narrowing of the orifice of the glottis, as in laryngismus stridulus, paralysis of the dilator muscles of the glottis, œdema, growths and cicatrices contracting the rima glottidis, and pressure external to the larynx.

5. *Stridor*, which is always accompanied by dyspnœa, occurs in the same conditions, and is produced by the same causes.

I.—ACUTE INFLAMMATION OF THE LARYNX.

ACUTE OR CATARRHAL LARYNGITIS.

Laryngitis seldom occurs as a purely independent affection, but is generally associated with more or less inflammation of other portions of the respiratory tract. It is not an uncommon disorder; but, of course, it is only when the larynx is chiefly affected that it is entitled to rank as a distinct disease. There are two varieties of the acute form, (1) the simple and (2) the œdematous, or, as they are sometimes called, the *mucous* and the *sub-mucous*.

1. Simple Laryngitis.—This is a very common affection in cold, damp and variable weather. It is characterized by more or less hoarseness, with or without cough, fever, difficulty of breathing, or swelling. The inflammation is confined to the mucous lining of the larynx; and when sufficiently severe to excite fever, it is attended by a dry, hoarse cough, husky, stridulus, or suppressed voice; tenderness or soreness in the laryngeal region; more or less difficulty of swallowing; and, in consequence of contraction of the laryngeal opening by internal tumefaction, more or less dyspnœa, or difficulty of breathing, particularly during inspiration. When the inflammation is of a still higher grade, there is generally considerable dysphagia, arising either from complication with inflammation of the fauces or from motion of the larynx in deglutition. The dyspnœa is sometimes so great as to render the breathing somewhat convulsive, the paroxysms depending, doubtless, upon spasm of the glottis. So long as the inflammation is confined to the mucous coat of the larynx, the danger is comparatively slight; and either subsides under treatment, or, as often happens,

travels downward into the bronchia, relieving the larynx, but giving rise to bronchitis, sometimes of a very severe character.

2 Œdematous Laryngitis, *or Œdema Glottidis.*—In this, the highest grade of inflammation of the larynx, the submucous tissues are involved, giving rise to rapid swelling of the internal mucous membrane, and sometimes to œdema of the glottis. In this case the laryngeal opening is closed or the aperture so diminished as to produce the symptoms of suffocation.

This form of acute laryngitis generally sets in with a chill, followed by fever, which is at first of a sthenic character, with a full, bounding pulse, hot, dry skin, and red face. At the same time the patient complains of soreness of the throat, and a feeling of constriction, or tightness, of the larynx. The voice is rough, the cough painful and harsh, and the breathing greatly impeded. Unless promptly checked, the dyspnœa rapidly increases, being at first wheezing or whistling, and afterwards suffocative and convulsive. The epiglottis is highly inflamed, swollen and erect, rendering deglutition extremely difficult and painful. Any attempt at swallowing produces violent paroxysms of coughing, from the entrance of irritating substances into the larynx, in consequence of the œdema of the glottis. Frequently, also, there is more or less œdema of the external parts in the vicinity of the larynx.

If not arrested, the symptoms are soon greatly aggravated. The voice becomes suppressed, or whispering; the cough weak, convulsive and painful; and the respiration so extremely difficult and anxious as to be accomplished only by the most violent efforts. The dyspnœa is now so great as to fill both patient and physician with the greatest anxiety and apprehension. The patient is unable to sleep or to remain quiet, but is constantly walking about, and gasping for fresh air. At length, a state of partial asphyxia sets in. The lips become livid, or purple; the face turns ghastly pale; the eyes protrude, and are surrounded by dark circles; the pulse becomes feeble and intermitting, or small and rapid; the countenance ghastly and staring; the skin cold and clammy; while the chest heaves with violent, but irregular and abortive attempts at respiration. At last the patient becomes delirious, or sinks into a comatose state, and so dies. Sometimes, however, the patient dies in a paroxysm of violent dyspnœa, before

asphyxia has taken place. In these cases death occurs from the sudden and prolonged closure of the air passage, as in strangulation; while in ordinary cases, it results from a want of due aëration of the blood, arising from the gradual closure of the passage, and consequent oppression of both the lungs and brain.

Œdematous laryngitis is generally very rapid in its progress, ending fatally, when not interrupted by treatment, in from one to three or five days, Its duration depends upon the degree and rapidity of the internal tumefaction of the larynx, or the supervention of œdema or spasm of the glottis Cases complicated with œdema of the glottis prove more rapidly fatal, as a general rule, than either of the other forms. They may generally be distinguished by the sudden violent accession of dyspnœa, without any corresponding increase of fever or other inflammatory symptoms.

Etiology.—Simple acute laryngitis is almost always of a catarrhal nature, the result of exposure to cold or damp. Some persons are peculiarly predisposed to this affection, especially those who are subject to frequent attacks of tonsillitis; but why some individuals, otherwise equally healthy, are so much more liable to throat affections than others, has never been satisfactorily explained. Doubtless much of the susceptibility to laryngeal disease arises from overheating the neck with superfluous wrappings. Other causes are: over-taxing the vocal organs in speaking and singing; the inspiration of heated air; the inhalation of irritating gases; mechanical violence; and the extension of inflammation from neighboring parts. Œdematous laryngitis, unlike the simple form, is an asthenic disease, and is most apt to occur as a complication or sequela of scarlatina, measles, erysipelas, mercurial sore throat, or in a scrofulous, scorbutic, or broken-down state of the system.

Diagnosis.—Observe the characteristic symptoms, namely, pain in the region of the larynx, increased by pressure externally, with dryness, roughness and soreness felt internally, and a sense of constriction; voice hoarse, cracked, and sometimes lost; cough hoarse, deep, hollow, or brazen, like that of croup, paroxysmal, sometimes becoming aphonic, painful, and attended with hardly any expectoration; occasional dysphagia; dyspnœa in severe cases. When not of traumatic origin, the disease is ushered in by chilliness, followed, in all but the

mildest cases with more or less fever, full pulse and flushed face. If the disease advances unchecked, the countenance becomes anxious, or pale, or somewhat livid, the pulse feeble and irregular, and the usual signs of asphyxia from carbonic acid poisoning, supervene.

When occurring in children, acute laryngitis is sometimes mistaken for croup. The following are the chief points of difference between the two diseases. In laryngitis the pharynx and tonsils are simply reddened, whereas in true croup there is an exudation on the soft palate and half arches, or in the pharynx. Again, in laryngitis the epiglottis is red, swollen, and sometimes œdematous; but in croup the epiglottis is unchanged, no swelling being discoverable either with the finger or mirror. The expectoration in laryngitis consists only of ordinary mucus; in membranous croup, on the other hand, it consists of tubes or fragments of false membrane. In œdematous laryngitis the inspiration is much more difficult than expiration; while in croup, expiration is often as difficult as inspiration. Again, œdematous laryngitis is without any distinct intermissions; whereas croup, especially the spasmodic form, has well marked intermissions.

Laryngoscopic Appearances.—The mucous membrane of the larynx is fiery red and more or less swollen. The epiglottis is sometimes so much swollen as to prevent an examination of the interior of the larynx. The mucous membrane covering the ary-epiglottic folds, arytenoid cartilages, cartilages of Santorini, ventricular bands, and sometimes even the vocal cords, is often much swollen and œdematous; the rima glottidis being frequently reduced to a mere chink. Sometimes the general redness is less, but marked by gorged vessels on the epiglottis, arytenoid cartilages, and even the vocal cords.

Prognosis.—In simple laryngitis, unless there is a scrofulous or tuberculous state of the system, the prognosis is good; but in the severer forms the reverse is generally true. The primary form of œdematous laryngitis is less dangerous than the secondary, especially that which supervenes upon chronic laryngitis, which is almost always fatal.

Treatment.—Simple acute laryngitis generally yields readily to the prompt administration of *Aconite* and *Spongia*. The same remedies are usually called for in the œdematous form, but they must be used low to be effective, and even then surgical interference may be

necessary to save the patients life. The *Etherial Oil of Mustard*, i_x, in alcohol, applied to the larynx by means of linen saturated with it and confined by a bandage, is said to give prompt relief in many cases. The operative measures consist in laryngeal scarifications and tracheotomy ; the former for the supra-glottic, and the latter for the sub-glottic varieties. *Scarification* may be performed by passing the blade of Buck's laryngeal knife, or, what is just as good, that of an ordinary gum lancet, down to the epiglottis, using the index finger of the left hand as a guide, and then freely scarifying the swollen membrane, taking care to use the cutting edge of the instrument in such a manner as simply to relieve the œdema. After the operation, the steam atomizer, figured in Pl. IV, Fig. 3, may be used to encourage the evacuation of serum, or, if the patient is of sufficient age, warm gargles may be used for the same purpose.

The sub-glottic variety, in which the œdema is too low to be readily relieved by the scarifying process, requires the operation of *tracheotomy*. This, when properly performed, is not a dangerous operation in these cases, as it effectually relieves the suffocation caused by the closure of the glottis. and gives time for the œdema to subside. Well-attested cases are on record in which patients have been thus restored after respiration had entirely ceased.

In performing tracheotomy, the patients shoulders should be supported with cushions, and the head drawn well back, so as to render the trachea as prominent as possible. The site of election in these cases is above the isthmus of the thyroid body, as there the trachea is comparatively superficial, and is not covered by any venous plexus ; but if for any cause this point cannot be chosen, the next most eligible situation is through the isthmus. An incision about an inch and a half in length is first made through the integuments, extending downward in the mesial line from the cricoid cartilage. Any veins that may now present themselves should be carefully drawn aside with a blunt hook, the muscles separated as far as may be necessary with a director, and the cellular tissue and glandular substance penetrated, using the *handle* of the knife in dilating the deeper structures whenever practicable, until the rings of the trachea are reached. The parts divided should be kept well separated with hooks, and the wound carefully sponged as each fresh incision is made. Before

opening the trachea it is a good plan to fix the tube by passing a sharp-pointed hook between two of its rings; otherwise the short and convulsive respirations of the patient will render it too unsteady to be safely penetrated. The trachea may then be opened by pushing the point of the knife between the two lowermost rings of the incision, and cutting upward through about three of them. A double canula, such as is figured in Pl. IV, Fig. 1, is then placed in position by means of the director, which is afterward withdrawn, and the canula secured by tapes round the neck. The tubes should be retained *in situ* until the œdematous infiltration has been reduced by appropriate medication, the inner canula only being withdrawn, from time to time, for the purpose of cleaning it.

Therapeutic Indications.—*Aconite.*—This remedy is generally appropriate in the first stage, when there is fever, especially in children; and is suitable in both mild and severe cases, not excepting those of the œdematous form.

Apis mel.—Hoarse voice and cough, with scraping in the larynx, and dyspnœa; rapid, painful, and spasmodic respiration, aggravated by lying down and by warmth. Especially indicated in œdema of the glottis.

Arsenicum.—Hoarseness, with burning in the larynx; suffocative cough; expectoration scanty and frothy, or consisting of blood-streaked mucus; dyspnœa, with swelling of the throat, especially at night. This remedy, also, is more particularly adapted to the œdematous variety of the disease.

Belladonna.—Fever, with sharp, stinging pains in the larynx; dry, spasmodic cough, with evening exacerbations; sensation of constriction in the larynx; aphonia; swelling of the tonsils.

Bryonia.—Hoarseness, with rattling of mucus in the larynx; spasmodic and suffocative cough, with expectoration of yellowish mucus; tenderness of the larynx on pressure. Indicated in simple cases after Aconite.

Hepar sulph.—Great hoarseness, with rough, barking cough; rattling of mucus in the larynx; aphonia, accompanied with slight suffocative spasms; worse in the morning, and within doors.

Iodium.—Dry, irritating cough, with dyspnœa; hoarseness, especially in the morning; constriction, pain, and heat in the larynx; hoarse cough, either with or without expectoration of mucus.

Lachesis.—Swelling of the larynx, with hoarseness, and hard, fatiguing cough; pressure in the larynx, with soreness, and sense of impending suffocation. This remedy is especially indicated in the œdematous form of laryngitis.

Nux vom.—Frequent cough, with burning and tickling in the larynx; slight hoarseness, fever, and chilliness, with frontal headache, especially in the morning. Suitable only to mild cases, and at the commencement, especially in children.

Phosphorus.—Fever, with hoarseness and dry cough, and stitches in the larynx; trembling or hissing of the voice; cough with accompanying chilliness; night cough, from titillation or stitches in the larynx. Most useful after Aconite.

Sanguinaria.—Cough dry and harsh, relieved by sitting up, but aggravated by eating and lying down, and accompanied by difficult expectoration of tough mucus; voice low and suppressed; great dyspnœa, especially at night, the breathing being characterized by a sawing and rasping sound issuing from the larynx; inspiration more difficult than expiration, owing to œdema of the glottis.

Spongia.—Cough dry and spasmodic; no expectoration except it may be in the morning; hoarseness, with scraping, burning, and constriction of the larynx; dyspnœa, as if the throat were closed with a plug; cough better after eating and drinking.

Stillingia.—Tickling in the larynx with loose cough; sensation of lameness in the cartilages of the larynx and trachea, with sense of constriction; bruised, sore feeling in the laryngeal cartilages. Useful in mild cases, induced by over-exertion of the vocal organ.

Tarter emet.—Paroxysmal cough, with dyspnœa and rattling of mucus in the larynx and trachea. Suitable to mild cases, especially when alternated with Spongia or Hepar sulphuris.

Clinical Observations.—Dr. Albracht Gerth is said to have cured an acute laryngeal catarrh with *turpentine inhalations*, twenty drops on a handkerchief, held before the nose and mouth, three times a day, the patient taking about forty deep inhalations.

Dr. Dunham recommends *Chlorine gas*, in a watery solution, as an effective remedy for œdema of the glottis.

Dr. Jacob Reed, jr., reports the following case of œdematous inflammation of the larynx :

"March 16, 1867, evening. Called to see Miss B., æt. 20, who had for some days "had a bad, sore throat," and was reported as choking to death. When seen, the patient was evidently suffering from an acute œdematous inflammation of the larynx, there being high fever, pain in the region of the larynx, difficulty of swallowing and breathing, voice almost inaudible, every effort at speaking causing great pain, inspiration prolonged and stridulous, being effected only by violent effort; there was but little cough.

"Ordered inhalations of steam, medicated with opium, cold pack to region of larynx, *Aconite* and *Kali bichrom.* internally; of the Aconite, three drops of the tincture were given in half a glass of water, a teaspoonful every twenty minutes. This appeared to afford relief, which, however, proved but temporary, as, upon paying my morning visit, I found the patient much worse in every respect. The leaden hue of the skin, with the intense anxiety of the countenance, showed that she had to fear the results of deficient aëration of the blood. This condition of affairs rendering tracheotomy necessary, I returned to the office for the necessary instruments and assistance, but in the meanwhile ordered two drops of the tincture of the Aconite root to be given every two minutes. Upon returning, after the lapse of an hour, the patient was so far relieved as to render surgical interference unnecessary, and from this the convalescence was steady, although slow and imperfect. There remains, after many months, a cough with hoarseness, owing to constitutional tuberculosis."

Dr. Thomas Nichol gives the following interesting case :—"I have lately had an opportunity of testing the virtues of *Sanguinaria* in acute œdematous larnygitis.

"On Friday, April 17th, I was called to Mrs. C., aged 59, who had been complaining for some few days. I found an inflammation of the cervical glands of the right side, involving the parotid gland to a limited extent, and accompanied by extensive inflammation of the subjacent cellular tissue. The parts were hot, tender, swollen and red—in fact, the well-known *color*, *dolor*, *tumor*, *rubor*—and there was

reddening of the fauces, with slight pain on deglutition. I prescribed Belladonna 6th decimal trituration, and advised rest, quiet and silence. On the following day the situation was but little changed, and Mercurius iodatus ruber 3d decimal trituration was prescribed.

"At 6 o'clock of Sunday morning, April 19th, I received an urgent call to the patient—who, I was told, had hardly been able to breathe all night. I found her sitting up in bed, with a characteristic sawing and rasping sound issuing from the larynx; a sound somewhat difficult of description, but which once recognized can never be forgotten. The tonsils and pharynx were swollen, but auscultation showed that the sawing and rasping sound issued from the larynx, The cough was dry and harsh, relieved by sitting up in bed, aggravated by eating and lying down, and it was accompanied by difficult expectoration of tough and glairy mucus. The voice was low and suppressed, and it was with difficulty that I could make out the hurried, whispered sentences. The pulse was feeble and fluttering, and the lips were pale; but on both sides of the cheeks there was a circumscribed redness. The pathognomonic symptom which made the pathological state quite clear to me was the fact, that *expiration was performed more readily than inspiration.* M. Thuillier's test was decisive as to the diagnosis, for "when the forefinger was passed into the larynx, there is a perception of a cushion formed by the tumefaction of the sides of the glottis, a soft, pulpy body, quite distinct from the ordinary hard feel of the parts.

"The diagnosis was acute œdematous laryngitis of the supra-glottic variety—all the more dangerous because it was an intercurrent disease, and the peculiar respiration arose from the fact that the œdematous membrane which fills the glottis closes like a valve against the entrance of air, but readily permits it to pass out. I prescribed *Sanguinaria* 1st decimal trituration, a dose every half-hour.

"At 1 P. M. I found that improvement had commenced almost as soon as the medicine was given. The sawing and rasping sound was now much diminished—the respiration was comparatively easy, inspiration and expiration were performed with the same facility; the cough was less frequent and less severe; the voice was quite audible, and the patient had slept much of the time since morning. The tonsils and pharynx were still red and swollen, but the glottis

was clear of the tense and rounded swelling present in the morning. The Sanguinaria was continued in the same dose.

"At 7 P. M., I again saw the patient and found that the very serious pathological state had almost wholly disappeared.—The Sanguinaria was continued all night, and in the morning, as the acute œdematous laryngitis was no longer present, treatment was directed against the inflammation of the cervical glands and cellular tissue."

The only case of œdema glottidis that I ever treated successfully with medicine alone, occurred in the early days of my homœopathic practice. The patient was a married woman, æt. 33, red-faced and corpulent. The symptoms were well-marked and violent. The dyspnœa, just before midnight, became extreme, amounting almost to apnœa. I had little hope of saving the patient, but boldly prescribed *Aconite* θ, in water, 15 drops to half a glass, a teaspoonful to be given every twenty minutes, in alternation with *Spongia*, 3 x; in about two hours I had the pleasure of seeing the disease begin to yield, and in the morning the patient was out of danger.—*Hart.*

2.—CHRONIC INFLAMMATION OF THE LARYNX.

CHRONIC LARYNGITIS; LARYNGEAL PHTHISIS.

Under this head are included various chronic affections of the larynx, most of which originate in a scrofulous, tuberculous, or syphilitic condition of the system, and are often complicated with a greater or less degree of ulceration. The follicular form, from its frequent occurrence amongst clergymen, constitutes what is called *clergyman's sore throat*, (q.v.), though it is by no means confined to them, but is often met with among other classes of people, especially singers. Owing to the vice of constitution before mentioned, the disease when fully seated is of the gravest character, and often baffles the most approved treatment. This is especially true of tuberculous cases, in which, sooner or later, the lungs are almost certain to become affected; thus greatly aggravating the laryngeal disorder, not only by sympathetic irritation, but also by causing a direct increase of the congestive and inflammatory state in which the larynx is involved, and by its prostrating effect upon the general system.

The disease presents itself under two principal forms, namely,

(1) the simple, catarrhal, or non-ulcerative form, and (2) the ulcerative, which includes the follicular, the tuberculous, and the syphilitic.

1.—Simple Chronic Laryngitis.—This form is characterized by a sense of uneasiness and tickling in the throat and larynx, which causes a frequent desire to cough. The expectoration is scanty, consisting of simple mucus, or of muco-pus, and rarely contains any blood. The voice and cough are hoarse, and aggravated by the frequent efforts to clear the throat. There are no general symptoms of any importance unless complications exist in the lungs or elsewhere. Nevertheless, the disease is decidedly chronic, the chronicity depending to a great degree, as in the other forms, upon the follicles being involved in the pathological process.

Laryngoscopic Symptoms.—The mucous membrane of the larynx is more or less congested, varying in color from the normal pink or red up to a purplish red. Inveterate cases exhibit here and there a dark brownish appearance, which, according to Tobold, is due to an ecchymotic process. Both the cords may be red, or only one or part of one. Passive venous congestion, or hyperæmic stasis, with softening and tumefaction of the mucous membrane, are met with, and, in cases of long standing, there is an hypertrophied condition of the mucous and sub-mucous tissues. Small pellets of mucus may be seen adhering in places to the mucous membrane, especially in the arytenoid commissure. In very chronic cases, the epiglottis is thickened and sometimes deformed, and the laryngeal cartilages more or less ossified. Ulceration is seldom or never seen in simple chronic laryngitis; at least, Mandl and others say, that up to the present time they have never met with a case of simple catarrhal ulceration in the larynx. In a few cases, papillary growths and mucous polypi appear on the posterior wall of the larynx, or spring forth from under the ventricles.

2.—Laryngeal Phthisis.—The characteristic local symptoms are, in addition to those of the simple form of chronic laryngitis, more or less difficulty in deglutition, and violent fits of coughing from food getting into the larynx. There is also dysphonia in the early, and aphonia in the later stage, and often great dyspnœa. The general symptoms are those of pulmonary consumption.

The symptoms which characterise the different stages of the complaint are so numerous, and at the same time are so frequently absent, that we shall only notice the most important. When ulceration exists, there is often a pricking or stabbing sensation in the larynx, especially when the patient attempts to speak. Swallowing is commonly more or less painful, and when the epiglottis is involved, occasions violent paroxysms of coughing and suffocation, together with more or less regurgitation of liquids through the nostrils. The voice, which at first is but slightly altered, undergoes every possible variety of change, becoming at times hoarse, shrill, whistling, whispering, or aphonic. The cough, also, is similarly affected, being hoarse, rough, hollow, stridulous, suffocative, or suppressed. As before stated, it is generally of a spasmodic or paroxysmal character; but towards the last it is sometimes loose and continuous, owing, probably, to non-closure of the glottis. The breath is often difficult and wheezing, resembling that of asthma. Sometimes the patient dies in a paroxysm of dyspnœa; at others, asphyxia sets in, in consequence of sub-mucous infiltration; but most commonly the patient sinks into a state of hectic exhaustion, attended with more or less gastric disturbance, diarrhœa, œdema, night sweats and emaciation. In these cases the disease is generally, if not always, of a tuberculous nature; though it is said that the disease sometimes occurs, and proves fatal, without the existence of any such complication. Such instances if they ever do occur are very rare; and it is far more reasonable to refer the obstinacy and fatal character of the disease in all cases to a tuberculous dyscrasia, which, as is well known, may co-exist in a latent form.

Laryngoscopic Symptoms.—These, at the commencement, are the same as we find in the simple form of chronic laryngitis. Later on there is pyriform swelling of the ary-epiglottic folds, and a swollen condition of the cartilages of Santorini. Eventually ulceration may attack any part of the mucous membrane. Meyhoffer points out in the incipient stage of tubercular laryngitis, (1) the destruction of the epithelium, (2) dilatation of the ducts of the mucous follicles, and copious purulent discharge, and (3) ulceration and destruction of the follicles as a rule, the mucous follicles being, from the outset, the seat of a destructive inflammation.

3.—Syphilitic Laryngitis.—Although syphilitic lesions are less frequently met with in the larynx than in the fauces and pharynx, they nevertheless occur with considerable frequency, especially on or near the epiglottis and vocal cords. These lesions are the manifestations of either secondary or tertiary syphilis, the former consisting of erythema, mucous patches, and superficial ulcerations, and the latter of tubercles, gummata, mucous ulcerations, and caries and necrosis of the laryngeal cartilages.

As a general rule, the chronic laryngitis of syphilis cannot with certainty be distinguished from the other forms of chronic laryngitis without inquiry into the history of the case. Prosser James, however, seems to think differently. He says: "There is a great difference in the shade of color in the congestions met with in phthisis and syphilis, so much so, indeed, that to those who have had much experience, the hue is as suggestive in affections of the throat as in those of the skin." This may be so when these two affections are contrasted with each other, on account of the blanched and anæmic appearance of the tuberculous affection; but it is extremely doubtful, to say the least, whether the color alone is sufficiently characteristic of syphilitic cases.

In tertiary syphilis the ulceration is deep and extensive, and is not necessarily preceded by thickening. The epiglottis is attacked early. The ulceration is often followed by cicitrazation and contraction, causing stenosis of the larynx.

Swelling and thickening belong equally to tuberculous and syphilitic cases. The swelling is sometimes so great as to obliterate the division between the cartilages and the arytenoids; the cartilages of Wrisberg and Santorini look like single, round or oval bodies, one on each side. The author last quoted gives only a qualified assent to this statement. He says: "So much stress has been laid on the swelling in this region as diagnostic of phthisis, that it seems desirable to insist on the still greater importance of thickening. It has, indeed, been stated that these swellings are pathognomonic of phthisis, but many authorities regard this as erroneous. We must therefore look upon it at present as doubtful. When the swelling is marked with a number of superficial yellow points, as if yellowish matter were exuding from enlarged follicles, the appearance is regarded as more signif-

icant, though we are not necessarily to conclude that these yellow points are actually due to the deposit of tubercle."

This thickening is not to be confounded with a somewhat similar state that is sometimes met with in syphilitic cases. In the latter it is more irregular in form, and speedily goes on to ulceration; moreover, the thickening that follows extensive ulceration of this kind is accompanied with great deformity.

The ulcers are of two forms, small, flat, superficial erosions, characteristic of secondary syphilis, and isolated deeper excavations. The first have a smooth bottom, are occasionally confluent, and are generally situated upon or at the continuation of the swollen, inflamed and softened vocal cords; occasionally they extend the entire length of the vocal cords. In both tuberculous and syphilitic cases, the ulceration is sometimes of the most extensive and destructive character, giving rise to necrosis of the cartilages, and even to fistulous openings, through which air sometimes escapes during expiration. This subject is so important that we shall devote to it a separate section. See *Ulcerative Laryngitis*, Sec. 4.

Etiology.—Among the more common causes of chronic laryngitis are the following: Inspiration of air contaminated by dust, smoke, chemical vapors, and other irritating substances; frequently recurring catarrhs; neglected or badly treated colds; the abuse of alcoholic beverages; sedentary occupations; straining the vocal organs by screaming, continuous public speaking, etc.; and the abuse of caustic applications. Acute catarrhs are also rendered chronic by living in unhealthy localities, and by the various constitutional dyscrasiæ, which impress their own character upon the disease, even when, as sometimes happens, they are otherwise latent.

Diagnosis.—As a general rule, the rational symptoms are sufficient to point out the true nature of the disease; but when any doubt exists, the laryngeal mirror furnishes a ready and positive means of diagnosis in all cases, the appearances being such as we have described.

Prognosis.—The prognosis will of course depend upon the form, character, extent and duration of the affection. In the simple form, the prognosis is always favorable, even when great structural changes have occurred, and the disease is of long standing; though, of course,

if the submucous textures are involved, and especially if the ventricular ligaments are hypertrophied, full restoration is not to be expected. Under these circumstances, recovery is necessarily slow and imperfect, since the constant action to which the parts are subject tends to keep up the inflammation, and frequently prevents the organ from fully regaining its normal functions. The prognosis is not so favorable in laryngitis ulcerosa as it is in laryngitis simplex. There is not only the danger, already alluded to, of œdema of the glottis supervening on ulceration with subsequent perichondritis; but the anatomical changes of the submucous tissues are so great, as to prevent, as a general rule, their ever regaining a normal condition. Slight cases, however, in which there is no marked dyscrasiæ to contend with, and in which there is but little if any hypertrophic induration, admit of successful treatment.

TREATMENT.—The forms and complications of this disease are too numerous and important for the treatment to be safely generalized to any great extent; but the following synopsis presents a practical summary, which will be found applicable to the great majority of cases:

I.—SIMPLE CHRONIC LARYNGITIS.

1. *Inveterate*—Arg. nit, Ars., Fer. perchlor., Hepar sulph., Iod., Kali brom., Kali iod., Merc. biniod., Phos, Sil., Sod. Sel., Sulph.

2. *Subacute.*—Ant. tart., Arum dracon., Arsen., Carbo veg., Hepar sulph., Iod., Kali brom., Kali iod., Kali bich., Kali caust., Laches., Mangan., Phos., Puls., Sep., Spongia.

3. *Intercurrent exacerbations.*—Apis mel., Arum triph., Bell., Hepar sulph., Merc., Kali bich., Kali brom., Puls., Spong.

II.—LARYNGITIS ULCEROSA.

1. *Mild and recent.*—Calc. carb. and hypophos., Hepar sulph., Iod., Kali hydriod., Kali bichr., Mang., Sil.

2. *Severe and protracted.*—Ars., Carbo veg., Calc. hypophos. and iod., Iodine, Kali hydriod., Phos., Plumb. acet., Merc. biniod., Sod. sel., Sulph.

III.—Dycrasiæ.

1. *Tuberculous.*—Acid. nit., Arg. nit., Arsen,, Bell., Calc. phos. and hypophos., Iod., Merc. iod., Opi., Phos., Kali hydriod., Puls., Selen., Sod. benz., chlor. and selen., Sil.

2. *Syphilitic.*—Ac. nit., Arsen., Aur. chlor., Kali bichr. and iod., Merc. bin., corr. and sulph., Phos., Phos. ac.

3. *Mercurial.*—Ac. nit., Hepar sulph., Iod., Mez., Kali chlor. and iod.

IV.—Complications.

1. *Aphonia.*—Ant. crud., Bry., Carbo veg., Electricity, Gels., Iod., Phos., Puls., Phyt., Sep., Sil., Spong.

2. *Œdema of the Glottis.*—Apis mel., Amm. brom., Iod., Sang.

3. *Spasmus laryngis.*—Bell., Cupr., Calc. phos., Cham., Corall., Dros., Hyosc., Igna., Ipec., Mosch.

4. *Polypoid growths.*—Arg. nit., Calc., Phos., Iod., Merc. iod. and bin., Sod. chlor., Sil., Sep. Sang.

5. *Menstrual derangement.*—Caul., Cimicif., Gels., Puls., Plat., Sep., Sulph.

V.—Local Treatment.

1. *Injections.*—These may be made with any of the laryngeal spray syringes, such as Gibb's (Pl. IV, Fig. 5), or Turcks, (Pl. VI, Fig. 2). On account of the dyspnœa, cough and spasm excited by this mode of application, it is not to be recommended. A better mode of applying liquids to the larynx and neighboring parts, is by means of

2—*The Laryngeal Sponge*, in the form of a probang, one of the most convenient of which, with bayonet catch, is figured in Pl. VI, Fig. 4.

3. *Insufflation.*—This is a convenient and efficient method of projecting the remedy upon the diseased parts by a puff of air in the form of an impalpable powder. In Pl. IV, Fig 4, is figured the insufflator of Rauchfuss, showing the opening for introducing the powder, and the slide which covers the aperture when the instrument is charged and ready for use. But the latest and best method of applying remedies to the diseased parts is by

4.—*Inhalation.*—For this purpose the steam atomizer, figured in Pl. IV, Fig. 3, is decidedly the best form of inhaler, and leaves nothing to be desired as to convenience or efficiency. In this manner we may apply such remedies as *Arg. nit.*, *Carbolic acid*, *Iodine*, *Kali bichr.* and *chlor.*, *Merc.*, *Natr.*, *Sod. benz* and *chlor.*, etc., directly on the lesion in the larynx, and introduced at the same time into the circulation The *benzoate of soda*, in the form of an inhalent, is claimed by Dr. Schuller, of Greefowald, to be an effectual antidote to the tubercular process. A three per cent. solution is to be inhaled from two to four times daily, according to the susceptibility of the affected tissues. The boiler of the atomizer should be filled only with distilled water. The inhalations should be regular and gentle, especially at first; but if, as is almost always the case in tuberculous patients, the lungs are likewise implicated in the tuberculous process, they should then gradually, with the increasing strength and aptitude, be made deeper and deeper. As a general rule they should not be protracted beyond a half hour at a time, when the patient should take two or three hours rest.

VI.—Prophylactic Measures.

1. *Rest.*—An inflamed larynx needs perfect rest as much as an inflamed limb.

2. *Protection.*—Atmospheric changes should be guarded against, by avoiding, as far as possible, exposure to cold and damp air; by so regulating the clothing as to keep the body warm, especially the neck, chest and feet; by allowing the beard to grow; by wearing flannel, especially if there is a tendency to perspire; and by using a respirator to exclude dust and other irritating substances, whenever compelled to inhale air loaded with fine particles of matter.

3. *Invigoration.*—The laryngeal tissues may be strengthened and rendered much less sensitive, especially to cold, by bathing the throat daily with cold water. The popular notion that exposure of the throat to the influences of cold air, increases the resisting power of the mucous membrane to atmospheric changes, is on the other hand, a fallacy, and should not be practiced.

VII.—Palliative Measures.

1. *The wet pack.*—The throat compress, or wet pack, applied at night, is often of considerable value in allaying soreness and hoarseness, but cannot be relied on for producing a cure. In obstinate cases, it may be employed during the day, and until the more acute symptoms are relieved, observing afterwards to bathe the parts freely with cold water before drying them.

2. *Soda water and milk.*—Benefit is said to be occasionally derived from drinking warm soda water and milk in the morning.

Therapeutic Indications.—*Acid. nit.*—Great irritation of the larynx; redness and ulceration of the epiglottis and larynx, with difficult and painful deglutition, violent dry cough, and nocturnal perspiration; mucous patches, tubercles in the larynx, and cracks about the labial commisures.

Aurum chlor.—Syphilitic cachexia; syphilitic lesions of the bones, especially those of the nose; syphilitic indurations of the glands; and specific ulcerations of the laryngeal cartilages.

Arg. nit.—Inflammation and swelling of the lining and posterior wall of the larynx, with hoarseness or aphonia, continual and vain efforts to swallow, pain and soreness in deglutition, titillation in the larynx, dry spasmodic cough, muco-purulent expectoration, and hawking; also laryngeal ulcerations attended with luxuriant granulations of their edges.

Arsenicum.—Rodent ulceration in the larynx, occurring in typhoid fever, or in a low state of the system, with great prostration, feeble, irregular pulse, and passive pulmonary congestions; also when there is a dirty red, or anæmic appearance of the laryngeal lining, with bluish-red patches, indolent or burning ulceration, with more or less sero-purulent secretion.

Ant. tart.—Accumulation of mucus in the larynx and trachea, causing dyspnœa, which is only relieved by cough and expectoration; sputa copious, mucous or muco-purulent, and brought up by hawking or coughing; bluish-red coloration of the fauces, which are also relaxed; dingy red and puffy condition of the epiglottis and laryngeal lining, which is covered with patches of mucus.

Belladonna.—Sub-acute exacerbations of inflammation in the throat, with painful and difficult deglutition, or attended with spasmodic cough; also when the voice is low, feeble and hoarse, and the cough dry and hollow.

Carbo veg.—Dingy purplish color of the lining of the larynx, particularly of the ventricular bands, with marked swelling of the vocal ligaments; also in long-standing catarrhs of elderly people, or in persons whose vitality is reduced to the lowest ebb, with nervous capillary dilatation of the fauces and larynx, and general torpor of all the functions.

Hepar sulph.—Tuberculous laryngitis, with scanty, tenacious, muco-purulent secretion, which is difficult of expectoration. It is particularly adapted to obstinate cases of pharyngo-laryngitis, especially the form known as "clergyman's sore throat."

Iodine.—Sub-acute forms of laryngeal inflammation, characterized by considerable irritation and muco-purulent secretion: also in the various stages and forms of phthisis laryngea, attended with follicular swelling, ulceration, hoarseness and aphonia.

Manganese—Laryngeal catarrh in weak, anæmic individuals, or in such as exhibit tubercular deposits in the lungs, with voice hoarse in the morning, but becoming gradually clear after the expulsion of lumps of consistent mucus; moderate, partial injection of the ventricular bands, and venous dilatation in the throat and pharynx. (*Meyhoffer.*)

Merc. iod.—Laryngeal catarrh, and the more acute forms of "clergyman's sore throat;" also when the parts are much swollen, dark-colored, with much hawking, coughing, and bright muco-purulent expectoration, particularly in the morning.

Merc. biniod. and *corr.*—In syphilitic laryngitis, the former in the more protracted forms of secondary and tertiary phenomena, and the latter in the more recent secondary forms of hereditary congenital syphilis of children; syphilitic inflammation of the throat and larynx, roseola and papulæ of the skin, and the most acute ulcerations of the tonsils.

Kali brom.—In follicular pharyngo-laryngitis, or clergyman's sore throat, especially when atony is the predominant feature; pharynx red, swollen and rugged, sprinkled with enlarged follicles; inflammation involving the posterior nares and the Schneiderian membrane on

the one hand, and the laryngeal lining on the other, which is dark-colored, swollen, thickened, and covered with greyish mucus.

Kali bich.—In subacute and chronic laryngitis, characterized by congestion, swelling of the tissues, and increased secretion of tenacious mucus; also in recent cases of follicular laryngitis, especially when not connected with a diathesis; and in syphilitic ulcerated throat when Nitric acid is not indicated.

Kali iod.—Catarrhal cases, when the symptoms of laryngeal irritation, dry cough, sensation of dryness, burning and tickling, are predominant; also for secondary and tertiary laryngeal symptoms and lesions, especially the mucous tubercles, gummy deposits, aud ulcerations resulting therefrom in the larynx.

Phosphorus.—Laryngeal catarrh characterized by irritable weakness; and in tubercular laryngitis, especially when combined with active tuberculosis of the lungs.

Sod sel.—Follicular swelling of the laryngeal lining; also in tubercular laryngitis, especially in the beginning of the disease.

Sulphur.—As an intercurrent remedy, and in cases characterised by venous engorgement; also when the disease is in some degree dependent upon or connected with a cutaneous affection.

3.—PROLIFEROUS INFLAMMATION OF THE LARYNX.

HYPERTROPHIC OR PLASTIC LARYNGITIS.

This form of laryngitis is characterized by a thickening of the mucous and sub-mucous tissues of the larynx, arising from a multiplication or proliferation of their normal cell elements, and not from an interstitial or adventitions exudation into their texture. Although the condition itself had long before been suspected, it was not until after the invention of the laryngoscope, that the true nature of the anatomical alterations in question was clearly demonstrated.

Laryngoscopic Appearances.—The affected portions of the larynx are deeply congested, the color varying, according to the natural vascularity of the parts, from a deep red to a bluish purple. The mucous membrane is also more or less tumefied, partly from congestion, but mainly from inflammatory proliferation, giving rise to hy-

pertrophic thickening of the affected tissues. The anatomical changes correspond to the duration, extent, and intensity of the inflammatory processes that give rise to them. Sometimes very marked hypertrophy of single parts, arising from consolidation of the sub-mucous tissue, takes place, giving rise to great changes of form; as, for example, in the case of the epiglottis, whose border is sometimes unequally thickened, and at others, uniformly enlarged, rolled up, or distorted, giving it more or less the form of an inverted U. These changes of structure and form sometimes alter greatly its relative position; instead of being vertical, it may be more or less oblique or horizontal, so as nearly to close the opening of the larynx. The arytænoids are often greatly tumefied, the natural form of the parts being changed to such a degree that the protuberances of Santorini and Wrisberg can no longer be distinguished; in other cases the enlargement is only partial, or confined chiefly to the Santorinian portion. The ventricular bands may be so much swollen as to cover one or both of the vocal cords; or the inter-arytænodean fold may be so much thickened as to protrude between the arytænoids, and thus hinder their approximation. The vocal cords are not often much hypertrophied, the parts of the larynx generally affected in this way being the arytænoid and ary-epiglottidean fold. The vocal ligaments, however, are sometimes so much thickened as to be rendered quite prominent and uneven. Tobold says the thickening of the sub-mucous and mucous membrane becomes often so great that the Morgagnian ventricles disappear to the eye, and the vocal cords on phonation seem fully covered, or display but a small seam, and the appearance presented by the contact of the hypertrophied ventricular ligaments and of the ary-epiglottic fold remind one of a closed nymphæ. Also, that the posterior laryngeal wall tends to hypertrophy, so that even on the deepest inspiration, therefore on the widest separation, the arytænoid cartilages may take on a semi-lunar convexity.

Symptoms.—The thickening of the laryngeal tissues, by causing a reduction of space, necessarily produces more or less difficulty of breathing, the amount of dyspnæa depending chiefly upon the character and extent of the anatomical changes. The reflex sensibility of the larynx dimishes in proportion to the consolidation of the laryngeal lining; consequently there is little or no pain, even

when the larynx is compressed. For the same reason, cough is almost always absent, being observed only when the vocal cords are inflamed, or there is a preternatural secretion of mucus—in other words, when there is a catarrhal condition associated with it. Sometimes there is more or less dysphagia, arising from changes in the form, position and mobility of the epiglottis; but as a general rule the difficulty of swallowing is not marked. The voice, however, is always greatly altered. Thus when, owing to a false anchylosis of the arytænoid cartilages, the separation of the vocal ligaments is prevented or greatly limited, the voice is either abolished or rendered hoarse, husky, cracked or muffled. On the other hand, if the approximation of the arytænoids is hindered by a swelling of the inter-arytænoidean fold, or by hypertrophy of their mucous and sub-mucous lining, the voice will be deep, hoarse, hollow or aphonic. The course of the disease is slow and indefinite; in some instances exhibiting periodical changes of improvement and aggravation, according as the climate and season are more or less propitious, and in others remaining stationary, apparently, for years.

Diagnosis.—The disease is readily distinguised from catarrhal, follicular, or tubercular laryngitis, by the tumefaction of the arytænoids and lining membrane, the absence of cough and expectoration, the obliteration of the mucous ducts, and the absence of ulceration or enlargement of the follicles. Polypi are generally pedunculated, and therefore not liable to be confounded by a close observer with circumscribed patches of hypertrophy, which always have a broad base. Cancer could only be mistaken for this disease previous to the stage of ulceration, and then only by inattention to the discolored, lobulated, ragged and painful character of that affection. The laryngoscopic appearances, therefore, are of themselves sufficiently characteristic to enable us to make a correct diagnosis in all cases.

Treatment.—It is generally conceded that in hypertrophic laryngitis, the local application of remedies, if not absolutely essential to success, are at least of the very highest importance in a therapeutic point of view. Meyhoffer claims that, in the majority of cases, it is a *sine qua non*, and that the chances of success diminish in propotion to the extent of the lesion and its inaccessibility to direct treatment.

Experience has shown that our chief reliance in these cases should be upon certain saline inhalations, especially of the chloride of sodium. Dr. Wiedasch, a physician of Norderney, by numerous careful experiments upon himself, has established the fact that such inhalations greatly promote the metamorphosis of the tissue, by increasing the excretion of urine, by augmenting the amount of urea and sulphuric acid in the same, by causing a greater discharge of bile, and of semi-fluid alvine evacuations, and by diminishing the weight of the body in other ways. It is essential, however, in order to obtain beneficial effects from these inhalations, that the solutions should not be too concentrated. In the great majority of cases, one drachm of salt to a pint of water will prove highly beneficial by removing congestions, and thereby diminishing laryngeal irritation, allaying the pain, burning, dryness, etc., lessening the cough by at first increasing and afterwards diminishing the expectoration, and by exerting a healthy stimulative effect upon the general system. The inhalations are best made by means of the steam atomizer represented in Pl. IV, Fig. 3; care being taken not to go immediately into the open air or into a cold room, as such sudden changes of temperature would be prejudicial. As the disease is exceedingly chronic, it is not advisable to inhale the remedy oftener than once in twenty-four hours, continuing the process from day to day until the symptoms of irritation are allayed. After this, if a more powerful local action is required, it may be obtained by applying directly to the diseased parts, by means of a laryngeal brush and mirror, a solution of *Iodine* in glycerine, of the strength of about three grains to a drachm; this application should not be made oftener than twice a week.

Sometimes, when the inflammatory symptoms predominate, *Mercurius iod.* 3 will be found a useful remedy, especially if alternated occasionally with the inhalations above mentioned.

Clinical Observations.—Meyhoffer gives the following interesting and instructive case: "L. Veil, æt. 35, professor at the Lycée of Nice, had lost his voice when about twelve or thirteen years old, and, though he recovered it again, its clearness and purity of tone were gone forever. For several years he continued well, but on applying himself gradually to the profession of teaching, frequent attacks of pharyngo–laryngeal catarrh became a serious impediment to

the exercise of his duties. In 1852 a more severe inflammation of the throat and larynx, characterized by aphonia, dyspnœa and pectoral symptoms, laid him by for about a fortnight, when he was obliged to petition for sick leave. A summer spent in one of the valleys of the Maritime Alps, the internal use of the sulpho-saline waters of St. Martin, restored his general health, but his voice remained more hoarse than before, and respiration was no longer so easy, though there was neither cough nor expectoration. From that time till 1861 his sensitiveness to changes of atmosphere increased and the relapse of his old complaint grew more frequent, particularly in winter; his voice became more muffled, the breathing more sibilant. Some time previously, having been incapacitated by his malady for his professorship, he had been placed in a post of responsibility in the establishment, in which his pen was more in request than his voice. In October, 1861, a new and vehement relapse caused him to request my attendance, and on November 11 I found a voiceless, sanguineo-nervous individual, breathing with the greatest difficulty; inspiration and expiration were equally laborious and sibilant The patient looked extremely anxious; the face pale, lips bluish, pulse 90, wiry; skin moist and clammy; he had not slept at all for the last two nights. The tongue was red and coated in the centre, the soft palate and arches and the pharynx were dark-red and swollen, and he complained of dryness and burning in the throat and larynx, with some difficulty in swallowing. There was also a dry cough, occasionally attended by a scanty expectoration. On the right side of the chest some sibilant rhonchi were heard. Urine scanty and dark-colored. Prescribed *Merc. iod.*, trit. 2, gr. vi. cum saccharum lact. ʒss, divid. in xviij part. æqual. One powder every four hours. Under the influence of this salt the inflammatory symptoms subsided within four days, and on the 6th of November there was no more cough or expectoration. I was able then to submit the laryngeal cavity to ocular examination.

"The following was the aspect of the parts. The whole lining of the larynx injected, and more or less of a dark-red color, puffed out and swollen; the arytænoids extremely tumefied, so that the protuberances of Wrisberg and Santorini formed but one large, roundish and smooth tumor, without any granulations, and nowhere exhib-

iting ulcerations or the apertures of the mucous ducts. The ventricular bands thick and enlarged, particularly the left ones, which, by their almost complete approximation, altogether hid from view the vocal cords; their dilatation is extremely slow, and only induced by energetic inspiration or by an effort to produce a deep sound, which causes their separation in but a very small degree. The voice is thus almost extinct, and capable of producing only very low, muffled sounds. The breathing, although easier than during the acute period just past, was still labored and sibilant after the slightest muscular exertion.

"In considering the extension of the plastic process in the larynx of my patient, I had but small hope of obtaining a reduction of the hypertrophied tissue, the less so as the affection was of so long standing. The patient's life being, however, in danger from the recurrent inflammatory attacks, my first object was to prevent their return; in order to attain this it became necessary to reduce the invalid's sensitiveness to atmospheric influences; he was, therefore, advised to follow a hydropathic course of treatment, to which he submitted himself for a month, continuing afterwards the wet sheet. At the same time inhalations of a solution of *Sodium chlor.*, ʒj in xvj oz. of water, were prescribed and continued till the first week of December inclusive. By that time, though no appreciable improvement of voice or of the respiratory functions was observable, the laryygoscope showed the lining of some parts of the larynx less red and injected. From Dec. 12, to the end of February, 1862, the saline inhalations were omitted, and instead the Iodine-glycerine solution *loco-dolenti* applied twice a week.

"After twenty-two applications of the above a decided improvement could be recognized; the voice was less muffled, and he was able to produce a series of the lower notes, which, although they sounded hoarse and hollow, evinced greater power than those he had been able to utter for the last two or three years; the respiration was perfectly easy. The laryngeal mirror, too, exhibited remarkable changes; the thickness of the ventricular bands had much diminished, and their enlargement was so reduced as to expose the vocal cords to sight. The approximation was, however, still prevented by the tumefaction of the arytænoids, which was still almost stationary.

"From March to the beginning of June the topical operations were reduced to one a week; the voice had acquired a larger range of sounds and more modulation, still it was hoarse and the enunciation of high notes impossible. The swelling of the arytænoids had considerably decreased, so that I began to be able to distinguish the protuberances of Wrisberg and Santorini. The approximation of the vocal ligaments was still only partial. Mr. V. being at that time appointed to the college at Toulon, he removed form Nice. Until the year 1864, when I last heard from him, he continued in the same state of health, and only once had a slight sore throat up to that time."

The only well-marked case of this disease that has come under my treatment, bore a striking resemblance to that described by Dr. Meyhoffer, but being of less duration, yielded much more rapidly and satisfactorily to treatment. This was similar to that above recommended, and was persisted in continuously for nearly a year. The patient afterwards took an ocean voyage, and on returning was able successfully to resume the practice of his profession—that of a preacher.—*Hart.*

4. — ULCERATIVE INFLAMMATION OF THE LARYNX AND TRACHEA.

LARYNGITIS ET TRACHEITIS ULCEROSA.

The larynx is peculiarly prone to ulceration; more so, perhaps, than any other part of the respiratory tract. This is especially the case with the constitutional and graver forms, such as the tubercular and syphilitic, although, as we shall see, the latter also occasionally attack the trachea. Pathologists describe no less than eight different kinds of laryngeal ulceration, to wit:

(1.) *Simple or Catarrhal Ulceration.*—This depends upon, or is associated with, a simple catarrh of the larynx, and is wholly unconnected with any constitutional disease. The ulcers are superficial, flat, irregular patches, consisting of mucous membrane deprived of its epithelium, and but slightly eroded.

(2). *Aphthous Ulceration.*—This is frequently present in chronic pharyngitis (q. s.), and also during pulmonary tuberculosis, but is not of tubercular origin. On the contrary, it seems to depend upon a plastic or diphtheritic process, the mucous membrane first becoming infiltrated and afterwards destroyed, giving rise to small, round ulcers surrounded with a red border.

(3). *Variolous Ulceration.*—This, as the name imports, arises from an eruption of variolous pustules, such as appear in the pharynx during an attack of small-pox, which change to small ulcers in the larynx, and generally disappear along with the cutaneous affection; occasionally, however, they give rise to the most acute laryngeal symptoms, obstructing the respiration, and in some cases resulting in œdema of the glottis.

(4). *Typhous Ulceration.*—Typhous ulceration arises from the same process that gives rise to the intestinal lesion. The ulcers, which are chiefly seated on the epiglottis, and on the mucous membrane in front of and between the arytænoids, are mostly flat, irregular excavations, surrounded with dark red or greyish borders. Sometimes they penetrate to the subjacent tissues, causing necrosis of the cartilage and even perforation. Although the ulcerative process is generally arrested as soon as the typhoid condition disappears, it is always dangerous, in consequence of the liability to perforation or to the supervention of œdema glottidis.

(5). *Follicular Ulceration.*—Follicular ulceration, as the name indicates, results from inflammation of the mucous follicles. The ulcers generally first appear in the pharynx, whence they spread to the larynx, giving rise to the small, round, deeply penetrating cavities, characteristic of follicular inflammation. Their existence in the larynx may be suspected in all cases of follicular pharyngitis (q. v.), attended with protracted hoarseness.

(6). *Cancroid Ulceration.*—This is generally of a lupoid or encephaloid nature, and usually originates in the pharynx, from which it sometimes spreads to the larynx and trachea, causing contraction, stenosis and aphonia.

(7). *Tubercular Ulceration.*—Tubercular ulceration of the larynx and trachea always depends upon tuberculoses, the so-called laryngeal phthisis being generally, and perhaps always, only a partial manifes-

tation of a general disease. In fact, we find that, in most cases, the former is preceded by a tubercular condition of the lungs or other organs. The ulcers, which are generally seated on the posterior wall of the larynx and trachea, vary greatly both in size and appearance, being sometimes small, oval or round, and sharply defined; at other times they are large and more or less irregular in their outlines. The latter are usually from the twelfth to the sixth of an inch in diameter, with flat, reddened edges, and have the appearance of having been scooped out of the subjacent tissues. In the trachea, the erosions are sometimes so small, close, and numerous, especially in the inferior part, as to give the whole of the inner surface the appearance of a sieve. The ulcers extend both in width and depth, denude the cartilages, invade their substance, and, finally, by destroying them, lead to perforation. When they invade the vocal cords, they give rise to aphonia, violent paroxysms of coughing, painful deglutition, dyspnœa, and, in some cases, to œdema of the glottis Frequently, also, owing to the co-existence of pulmonary tuberculosis, there is more or less anæmia, muscular debility, fever, night sweats, and emaciation.

(8). *Syphilitic Ulceration.*—Syphilitic ulceration, like the tubercular, attacks both the larynx and the trachea. Though the larynx is much the most frequently affected, nearly fifty cases of the latter have been recorded, and in some of these the larynx has been free from ulceration. The ulcers, which include both the superficial ulceration of secondary syphilis, and the deep-seated ulcerations, caries, and necroses of the cartilages, of tertiary syphilis, are generally small scraggy sores, with raised edges and a cheesy base. Cicatrization leads to contraction, stenosis, and aphonia. The aphonia is sometimes paralytic; and in a large number of cases, the alteration of voice is out of proportion to the extent of the laryngeal lesion. This of itself is often sufficient to determine the true nature of the affection. In other cases, the coexistence of other symptoms of constitutional syphilis, or the history of the patient's antecedents, will be necessary to clear up the diagnosis.

Symptoms.—Owing to the great similarity, not to say identity, of the symptoms usually resulting from the various forms of laryngeal ulceration, we shall avoid much needless repetition by giving them under one common head. It is important to bear in mind, however,

that almost every form of ulceration may exist without exciting any marked uneasiness in the larynx, or in fact giving any subjective evidence of its existence. Nothing, therefore, but a laryngoscopic examination can in many cases establish the diagnosis. Nevertheless, the ulcerative process is generally attended with more or less alteration of the voice, cough, pain, difficulty of swallowing, and sense of suffocation. The voice is variously modified, being hoarse, hollow, whistling, cracked, shrill, or quite lost. Hoarseness is most common, and is generally one of the earliest and most persistent symptoms; but in some cases it is quite transient, being frequently succeeded by a sudden loss of voice, the result perhaps of extensive ulceration. Severe pain is not often experienced when the organ is quiet, but a pricking or titillation in the laryngeal region, especially in the inter-hyo-thyroidean region, from ulceration of the epiglottis, is not uncommon. Speaking and singing are apt to develop sharp pricking or stabbing pains; but it is in the act of coughing or swallowing that this symptom is most common, as well as most prominent and distressing. Cough, when present, generally occurs in paroxysms, especially after eating or speaking; but sometimes it is continuous, and of a short and hacking, or loose and easy character. Expectoration is not very common, except when the ulceration is complicated with catarrh or pulmonary disease; then it may be quite copious, and either purulent, sanious, bloody, or fetid. When the ulceration is extensive, deglutition is rendered very difficult and painful; in some cases the dysphagia is so great that the patient is unable to swallow any substance, either solid or liquid. Dyspnœa is often a marked symptom, arising not so much from the direct effect of the ulceration, as from its provoking spasm of the glottis. Sometimes it results in the supervention of sub-mucous effusion, giving rise to œdema glottidis; or if cicatrization results, it may be followed by contraction and stenosis. Occasionally, the ulcerative process, instead of increasing the difficulty of breathing, seems to lessen it, probably in consequence of the removal by ulceration of tumefactions which narrow the laryngeal opening. This is most apt to occur in the tubercular form, after free suppuration has set in; but respiration, even when unobstructed, usually has a peculiarly resonant, deep, and rough sound, quite characteristic of laryngeal disease.

Diagnosis.—As already stated, the laryngoscope alone can be relied upon to furnish sufficient evidence to establish the diagnosis in ulceration of the larynx. But the case is different when we come to consider the true nature of the affection, or the gravity of the lesion. Here a knowledge of the patient's history and constitutional condition is oftentimes essential to the formation of a correct opinion. For instance, if the patient has an ulcerated larynx with aphonia, it is almost certain to be either of tubercular or syphilitic origin, as ulceration is rare as a result of simple or acute laryngitis. It is also a very rare thing to find ulcerations of tubercular origin without some change in the lungs. If, then, the lungs are found to be free from disease, and especially if the patient has been, or is liable to have been, exposed to the infection, we are justified in referring its origin to syphilis. We should not, however, rest satisfied with a mere inference, however probable, but determine properly, carefully, and thoroughly, the existence or non-existence of syphilis; since in such cases little or no benefit will result from local applications, until after the constitution is impressed with anti-syphilitic treatment. Here, it is obvious, the previous history will be of the greatest importance in settling the diagnosis. On the other hand, if there is no syphilitic history, nor any evidence of constitutional infection, to be obtained, and the patient's lungs are found to be implicated, we conclude at once the case is one of tubercular origin and nature. It is true, that, when concomitant signs of tubercles in the lungs are absent or doubtful, a superficial observer might mistake tubercular for follicular laryngitis, especially in the first stage; but aside from the fact that the latter disease is almost always associated with follicular pharyngitis (q. v.), it has none of the destructive tendency observable in tubercular laryngitis. Thus, in the incipient stage of follicular laryngitis, even the epithelium is preserved; and although there is hypertrophy and obstruction of the mucous follicles, there is an absence of secretion, and seldom any ulceration.

Treatment.—The following observations of Meyhoffer, respecting the treatment of tubercular laryngitis, (and they apply equally well to the syphilitic condition), are so judicious, that we feel we cannot do better than copy them entire: "The treatment of laryngeal phthisis must necessarily here be limited to instances where the

larynx exhibits almost exclusively the local manifestations of the tuberculous diathesis, or the urgency of the laryngeal symptoms requires instant relief. The treatment of the diathesis will find a more opportune place in the chapter on phthisis pulmonalis. Be it, nevertheless, remembered, that the remedies to be selected must be in specific relation to the local as well as the general condition, as in no form of chronic laryngitis is local combined with general treatment more efficient. We have done all in our power to satisfy ourselves of the respective value of the local medicated inhalations, or general application of drugs, and have arrived at the conclusion that their simultaneous direct and indirect action conduces in a shorter time to a satisfactory result than when limited exclusively to the one or the other. It is, moreover, none the less evident to us that the effect of higher dilutions *per intus* is as certain, notwithstanding the absorption of the same substance in a more material form by the lining of the air tubes, as when exhibited alone.

"Our usual custom is to allow the medicine to be absorbed first from the stomach, in order to assure ourselves of its general action, before proceeding to inhalations of the same substance, unless special indications demand their immediate use.

"The formulæ of the remedies to be inhaled vary, not only according to the nature of the drug, but also with reference to the susceptibility of the patient. The proper time for inhalations is, one hour before a meal, twice, or occasionally three times a day; as, then, nothing prevents the contraction of the diaphragm. We begin as a rule with sixty inhalations a day, increasing the number gradually to one hundred and fifty; the inspirations being taken as long as possible."

Applied by means of the steam atomizer, (Pl. iv, Fig. 3), we have found the following substances of great value.

"*Acidum nit.*, 3 and 6, in great irritation, redness and ulceration of the epiglottis and larynx, with difficult and painful deglutition, violent dry cough and nocturnal perspiration. The inhalations of five to ten drops, of the first dilution, to an ounce of water, has mitigated rapidly the troublesome throat symptoms.

Our author goes on to say: "We use *Argentum nit.* in all its preparations; from the second and third potency to the local applica-

tion of the lunar caustic, and from one to six grains to an ounce of water for inhalations. Nitrate of silver proves a highly beneficial agent in all the stages of tuberculous laryngitis. In the beginning of the disease, when throat and larynx are much inflamed, and with titillation in the latter, much hawking or spasmodic cough, and accumulation of phlegm in the throat. At a later period, when the edges of the ulcers are the seat of luxuriant granulations, the inhalations of the stronger solutions of this salt produce excellent effects, as they reduce the morbid growth. We think, also, that we owe to them the having never met with the formidable complication of œdema glottidis. In several instances we have ascertained incipient serous infiltration of the sub-mucous tissue in the last stage of laryngeal phthisis and seen it give way to these solutions. They have, however, the drawback of blackening the skin or linen with which they come in contact; that can only be partly avoided by inhaling the steam through a glass tube, or by otherwise protecting the exposed parts.* Sometimes, therefore, when wishing to act with more energy, without employing the caustic in substance, we use insufflation into the larynx by a curved tube, (Pl. iv, Fig. 4), of one or two grains of the first decimal trituration of nitrate of silver. The frequent effect is a violent fit of coughing, but the growth is thoroughly acted upon, and the operation need not be repeated more than three or four times. Should the vegetations be extensive, however, or in cauliflower form, or if by their situation they should cause dyspnœa, they must either be destroyed by the port caustique, or removed with the laryngeal scissors, (Pl. vi, Fig. 1). The same operation is to be performed on the semi-detached flaps of the mucous membrane. Difficult and painful deglutition, with extensive ulceration of the epiglottis, is often relieved by the direct application of the caustic.

"*Arsenic* 3—30th, *Liq. Arsenitis Sodæ*, 2—6 drops to an ounce of water. There is hardly any form or stage of phthisis laryngea in which at some time or other the arsenious acid will not be the specific remedy. But it is especially in the chronic course of this disease that it is indispensable. The leading symptoms are: a dirty red, or anæmic appearance of the laryngeal lining, with bluish-red patches,

* We have found the best protector in these cases, when the steam atomizer is employed, to be Beigel's screen.

or general discoloration of the tissues ; indolent, or burning, extensive ulceration, with more or less sero-purulent secretion. Pulse small and feeble ; progressive emaciation and weakness. Other symptoms, such as cough, fever, etc., may coexist or not. While the internal use of the Arsenic stimulates the functions of nutrition, the inhalations rapidly determine an improved aspect, the ulcers begin to show healthy granulations, and in several instances we have observed even those of old standing cicatrise when the cartilages had not been attacked

"*Belladonna* 3 and 6 has a limited, but none the less precious, sphere of action ; we use it when either accidentally from cold, as well as in the diathesic process, a more acute inflammation in the throat makes deglutition difficult and painful, or gives rise to spasmodic cough.

"*Mercurius iod.* 3, after Belladonna, when the parts are much swollen, dark-colored, with much hawking, coughing, and vivid mucopurulent expectoration, particularly in the morning. It is often best followed by *Kali iod.* 1—3, and *Iodine* 3—6, which, with Arsenic, are the most efficient agents (next to *Benzoate of Soda*—see below) in tuberculous laryngitis. For local application we make use either of Iodine-Glycerine solution (grs. iij ad drachm j) or inhalations of three grains of Kali iod. to an ounce of water. Under the combined influence of local and general administration of Iodine and its salt, we have seen follicular swelling retrograde, ulcerations cicatrise, the voice restored, or at least improved."

Benzoate of Soda.—This remedy, which now takes the first rank in all tubercular affections, should be prepared and used as recommended under the head of *Chronic Laryngitis* (q. v.)

In syphilitic cases, also, constitutional and local treatment should go hand in hand—*Merc. cor.*, *iod.*, *biniod.*, *sulph.*, *Kali bich.* and *iod.*, *Acidum nit.* and *fluor.*, and *Aurum chlo.*, being our chief remedies. These should be prescribed according to the constitutional stage of the affection, using at the same time a few drops of the 2d or 3d decimal potency by inhalation. See *Chronic Laryngitis*, Sec. 2.

Clinical Observations.—Dr. Walker, of Germantown, Pa., reports the following cases : "Miss Kate ———, probably 25 years old. Her father's family were all consumptive. She lost two

brothers, aged 20 and 27 years, and one sister, aged 20, with phthisis. Six years ago she had dysentery, which yielded to *Cantharis* 200, not to return ; following this, hemorrhages of the lungs ensued, with hacking cough. *Phosphorus* being her remedy, I supplied her with the 200th attenuation, advised her to leave the hosiery manufactory, go to the country, and live as much as possible on new *warm* milk. She returned in four months so much improved I hardly knew her ; and as her parents depended on her labor for support, she was obliged to go to the factory again. Her health consequently declined, voice became husky and aphonic ; she could not speak aloud, except during menstruation, and a few days after ; that over, she was again aphonic for three weeks. She now placed herself under the care of an animal magnetizer, her voice became good for several weeks, when the aphonia returned and he could do nothing to relieve it. After several ineffectual trials of other remedies she returned to me, when, upon laryngoscopic examination, I found a small white ulcer, with cheesy base, on both vocal cords near their anterior insertion, catarrh of the pharynx and larynx above the vocal cords, and her breath of that peculiar sweet, putrid odor so common in consumption. I put her again on *Phosphorus* 200th three times a day. In three weeks her voice, though harsh at times, became pretty clear, and has remained so more than a year. The ulcers on vocal cords continue, though not so large. A Cornell student had typhoid in 1875, followed by catarrhal laryngitis, and two small tumors over the right cartilage of Wrisberg. I studied over the case, gave different remedies, and thought *Thuya* 200 did more to reduce the tumors than any other remedy. The case has now progressed to the ulcerative stage, which is sometimes the termination of chronic catarrhal laryngitis. I find *Argentum metallicum* 200 doing considerable good ; since its administration the ulcers are much more superficial and the inflammation less."

Dr. Egbert Guernsey says he has given *Salicylic acid* with good effect in tuberculous cases, when there was evidently an ulcerative condition of the mucous membrane of the larynx and bronchia.

For the excessive cough caused by laryngeal ulcers, Kafka recommends *Sulphate of Atropia*, second attenuation, ten drops in half a glass of water, a dessertspoonful every hour or two hours.

Dr. Hale recommends *Stillingia* in syphilitic cases. He says: "This remedy has a specific affinity for the tissues of the larynx, especially the cartilaginous. This makes it a valuable remedy in those rare but terrible cases of *syphilitic laryngitis*. It has been used, also, in non-specific *laryngitis* and *pharyngitis*. Its laryngeal symptoms resemble those of Mercurius, Lachesis, and Hepar sulph. It has cured many cases of *hoarseness and cough* of public speakers (clergyman's sore throat.)"

Prof. Burow, of Konigsberg, speaks very highly of the local application of *nitrate of silver* in chronic laryngitis. He mixes three grains of *Argentum nit.* with one drachm of *Saccharum lactis*, and causes the patient to insufflate daily as much as would lie in the barrel of a steel pen. Chronic laryngitis, which had gone on to the production of complete aphonia, he claims was thus cured in a few weeks. M. Ebert, also, has used the same mixture with surprising success, it is said, in several similar cases.

5. — PSEUDO MEMBRANOUS INFLAMMATION OF THE LARYNX AND TRACHEA.

LARYNGO-TRACHEITIS; MEMBRANOUS CROUP.

Although, according to the etymological derivation of the term, every disease characterized by the formation of a false membrane might, with seeming propriety, be called diphtheritic, the latter term is now used to distinguish a class of affections, the pathology of which is so essentially different from that of membranous croup, that, notwithstanding Bretonneau and other French authors have persisted in calling the disease under consideration "laryngeal diphtheritis," "diphtheritic laryngitis, etc., thereby confounding it with a totally different affection, we shall here treat only of the simple exudative variety reserving the consideration of diphtheritic affections for a separate chapter.

SYMPTOMS AND COURSE.—The disease is usually divided into three stages or periods.

1. The *first stage*, or period of invasion, is characterized by the symptoms of ordinary catarrh, such as cold in the head, sneezing, red and watery eyes, hot skin, quickened pulse, thirst, cough, and an

altered condition of the voice. The last-mentioned symptom, to which, as a precursory sign, much importance is attached, is a kind of huskiness or hoarseness, much thicker and less ringing than the hoarseness that attends the latter stages of the complaint. The respiration is more or less quickened, the acceleration depending upon the amount of febrile movement, and other attendant circumstances. All the symptoms mentioned are not always present in this stage, and, when they are, they differ greatly in intensity, from those of a slight cold up to the symptoms of a violent catarrh. In some cases, indeed, there seems to be no precursory stage whatever, the disease appearing to be fully formed at the very commencement. As a consequence, the duration of this stage is very unequal, varying from a few hours to two or three days, but lasting generally not more than twenty-four hours.

2. The *second stage*, or period of development, is characterized by a sudden aggravation of the preceding symptoms, or else they set in without any warning when the first stage is wanting. In whatever way the accession occurs, the child is generally aroused from sleep with symptoms of suffocation, attended by a peculiar hoarse, ringing or brazen cough; deep, rough voice; and gasping, hissing and panting respiration. This sudden nocturnal accession or aggravation of the disease shows it to be spasmodic, as well as inflammatory, in its nature; indeed, there can scarcely be a doubt that, at this stage of the malady, the peculiar ringing character of the cough and the difficulty of breathing are both owing mainly to spasm of the larynx. The cough is so peculiar that it cannot be accurately described, though "when once heard it is seldom forgotten." It has been compared, somewhat inaptly, to the barking of a dog, the crowing of a cock, and the metallic sound produced by blowing through a brazen tube.—(*Churchill.*) The respiration is dry, sonorous and wheezing; and the voice rough and hoarse, or weak and whispering

As the disease progresses, the paroxysms of coughing and dyspnœa become more frequent and distressing. The child's face is livid, and covered with perspiration; the eyes protrude; the neck is extended and rigid; the arms are thrown wildly about, with the hands clenched; or the little patient grasps impatiently at the larynx,

as if trying to remove the obstruction to respiration. The symptoms above mentioned, constituting what is called the paroxysm, remit or diminish in the morning, the remission continuing until towards evening, when the dyspnœa, cough, fever, general distress and anxiety again increase, and become greater than before. The pulse is now hard, rapid and small; the dyspnœa greatly increased; the cough convulsive and ringing; the voice hoarse or whispering; the lips and face livid and swollen, or red and puffy; the eyes protruding and watery; and the skin dry and burning, except that of the head and face, which is covered with moisture; the whole aspect of the case being one of intense distress.

The disease, unless checked by treatment, now progresses with fearful rapidity. The dyspnœa becomes still greater, the cough more difficult and suffocative, the voice brokenly whispering or suppressed, while the remissions lessen until they become scarcely perceptible. Sometimes there is vomiting of glairy mucus, or of mucus mixed with shreds of lymph, which seems for a time to give partial relief. Deglutition is rendered difficult and painful by the tenderness and soreness which exist in the laryngeal region. But the chief complication of this stage, and that which renders the disease so extremely dangerous, is the formation in the larynx and trachea of a pseudo-membranous exudation, which, if not arrested or removed, is certain sooner or later to destroy the patient by suffocation. There is no known symptom by which we can positively distinguish the presence of the false membrane in the air-passages, as the peculiar cough and dyspnœa can be accounted for by the spasm of the larynx, and the tumefaction resulting from the inflammation. As a general rule, however, we are justified in inferring that, when the cough is loud and clear, the false membrane is wanting, and when it is suddenly suppressed, or becomes suffocating, that the exudation has taken place. Of course, when shreds of lymph appear in the sputa, or in matter vomited from the stomach, all doubt is at once removed.

3. The *third stage*, or period of collapse, is characterized by a general failure of the vital powers. Thus, the extremities are cold and pale; the face livid or mottled, and covered with cold perspiration; the eyes no longer protrude and stare, but are glazed and sunken; the pulse is weak, quick and intermitting; the voice is abolished, or weak and whispering; the cough suffocative or suppressed;

and the respiration extremely short, anxious and labored; in fine, the whole expression of the case is now one of extreme danger and unspeakable anguish. At last, after a period of eighteen or twenty hours, unless suffocation takes place sooner, the brain becomes oppressed, stupor and coma supervene, the respiration becomes irregular and convulsive, and the child dies in a state of insensibility or spasm

Such is the usual course of this disease, in very severe and fatal cases; but although the complaint is always exceedingly dangerous, the symptoms are frequently so much more favorable at the outset, in consequence of the absence of the pseudo-membranous deposit in the earlier stages, that, notwithstanding the apparent violence of the precursory symptoms, the disease almost always runs a favorable course. In these cases, commonly called "catarrhal," the spasmodic symptoms generally predominate. There is the same alteration of the voice, the same peculiarity of cough, and the same difficulty of breathing, that characterize the more fatal variety just described; but, owing to the absence, at this period, of the pseudo-membranous exudation, there is not the constantly increasing and uninterrupted dyspnœa, and consequently not the same danger of suffocation. If, however, the catarrhal symptoms are not subdued, and the case be neglected or mismanaged, the exudation may subsequently take place, and the disease prove rapidly fatal.

Complications.—Croup is most frequently complicated with bronchitis, pneumonia, pleurisy, and emphysema, which may be discovered by due attention during the remissions of the disease. As a general rule, however, they will neither be recognized, nor call for special treatment, until the violence of the disease is passed. They will then require, as in all other cases, such attention and treatment as their nature and importance demand.

Diagnosis.—We have already given, under the head of acute laryngitis, the differential diagnosis between simple inflammation of the larynx and croup. In spasm of the glottis there is no cough, the voice is unaltered, inspiration only is impeded, and the crowing sound is very different from the hissing respiration of croup. Diphtheria, when it invades the larynx, constitues a form of croup, which, by way of distinction, is sometimes called *secondary croup;* it is also sometimes called the *croup of adults*, it being the only form of the disease to which they are liable. It is highly important to distin-

guish it from membranous croup, as the latter is a sthenic and the former an asthenic disease—the one a local and the other a constitutional disorder. See *Diphtheritic Affections*, Chap. IX.

Prognosis.—The prognosis in all cases of true croup is more or less serious, but under homœopathic treatment the disease is shorn of most of its terrors. Success, of course, depends to a great extent upon the period at which the disease comes under treatment, as well as upon the intensity of the symptoms, and the nature of the complications. If the case be mild or "catarrhal," or, if severe, it be seen at the commencement of the attack, or before the false membrane has formed, the prognosis is generally favorable; on the other hand, if the disease is severe and has reached its second stage, and especially if the false membrane is fully formed, the probabilities are against recovery. Cases, however, have recovered even under these circumstances; the false membrane having been coughed up in large masses, sometimes in perfect tubes, affording complete relief even after the disease had reached the bronchia.

Etiology.—The exciting causes are: exposure to cold and damp, as when sitting on the damp ground; getting chilled; exposure of the neck, arms and limbs of children to the raw air, especially during great atmospheric changes; low, damp habitations; epidemic influences; and the debility arising from insufficient nourishment, or from previous illness. The predisposing causes are: constitutional aptitude, which renders some children, and even whole families, much more liable to it than others; and also the relative smallness of the larynx and trachea in infants, which do not attain their proportionate size till after the third year, when the liability to croup rapidly diminishes.

Synopsis of Treatment.—Acon., Hepar sulph., Sang, Spongia: *premonitory symptoms and first stage.* Ant. tart., Brom., Hepar sulph., Iod., Kali bich. and brom., Kaolin, Sang., Spongia: *fully developed croup.* Acon., Bell., Carbo veg., Hepar sulph., Phos., Sulphur: *complications and sequelæ.* Calc. carb., Hepar sulph., Iod., Sang., Sil., Sulphur: *predisposition.*

Special Directions.—The most important remedies for croup are *Aconite*, *Hepar sulphuris* and *Spongia*, to which may be added the occasional use of the other remedies above mentioned. The required medicines should generally be of the third attenuation,

and given in water, a dose every five, ten, or fifteen minutes, according to the urgency of the case. During the first stage, *Aconite* alone, or alternated, if necessary, with *Belladonna*, or with *Hepar sulphuris*, *Gelseminum* or *Sanguinaria*—the two latter in a low form—is all that is generally required. If the disease passes into the second stage, then *Hepar sulphuris* and *Spongia*, or *Aconite*, *Hepar* and *Spongia*, should be given in the same manner, the *Aconite* being used, or not, according to the violence of the inflammation and its effect upon the disease. If this treatment fails to check the disease, and especially if the children are weak and scrofulous, *Aconitum* and *Iodium* may be given in alternation, either with or without an occasional dose of *Hepar sulphuris*. The remedies should now, as a general rule, be used higher, say the 6th, 12th, 30th, or 200th, according to circumstances. Sometimes *Bromine* and *Kali bichromicum* will be found to be the most effective remedies in this stage, especially if the false membrane has formed. Should the disease continue to progress, and especially if it passes into the third stage, *Bromine* should be used, not despairingly, for even then it may save the child's life. If the case reaches the point of extreme prostration and insensibility, *Phosphorus* may be given in alternation with the *Bromine*, and, if the case is not beyond all hope, it will even then respond to the action of remedies.

Auxiliary Treatment.—*Inhalation of steam, and of Bromine and Iodine vapors.* Ten drops of pure *Bromine* or twenty of *Iodine* may be added to two or three ounces of boiling water, and the patient allowed to inhale the vapor that arises from it, whenever those remedies are indicated. The vapor from freshly slaked lime is also highly extolled by some practitioners; but as the usual method of saturating the atmosphere of the room with it is calculated to defeat its own object—(1) by hindering the oxygenation of the blood when the latter is most needed, in consequence of the mechanical obstruction to respiration caused by the adventitious membrane, and also by the paralyzed state of the laryngeal muscles; and (2) by the infinitesimally small amount of the lime held in solution by the vapor—the remedy should be administered by means of a steam atomizer. See Pl. IV., Fig. 3.

Tracheotomy.—The success of tracheotomy in croup depends in most cases on its early performance, being more successful, as a

general rule, the earlier it is practiced. This will satisfactorily account for the different estimation in which the operation is held by the majority of French and English practitioners, the former performing it early with marked success, while the latter almost invariably fail, in consequence of their deferring the operation, as a general rule, until the case is utterly hopeless.

Some of the more important points to be remembered respecting this operation in croup, are these:

"1. Tracheotomy ought to be performed in membranous croup as soon as there is a recession of the chest walls. The higher operation is preferred, as the more easy in children. An anæsthetic may be safely administered. 2. In every case the trachea and glottis ought to be thoroughly cleared of all foreign matters, whether membranous or mucous, before the introduction of the tube, and frequently after that. 3. The largest tube ought to be employed which can be gotten into the trachea without actual violence. Its tracheal part ought to be freely movable. 4. The curve of the tube ought to be made in the form of a quarter circle, for those generally in use impinge almost necessarily on the anterior portion of the trachea, and may there easily lead to ulceration. More mischief is done by ill fitting than by rigid tubes, but Mr. M. Baker's flexible tubes are not directly opposed. 5. Beside the frequent mechanical clearing after the operation, which is again most distinctly demanded, steam is to be employed for this purpose, to which solvent, astringent, antiseptic remedies, Creosote, Carbolic acid, Benzoic acid, etc., may be added with advantage." 6. Whenever practicable, the thermo-cautery should be preferred in these cases, as it effectually prevents hemorrhage into the trachea.

Clinical Observations.—"Dr. Palvadeau, in the Union Medicale, 1878, No. 86, reports two cases of croup that were treated by him and Regi by means of injections of liquor ferri sesquichlorid., that recovered. His method is as follows: fifteen drops of the liquor are mixed with fifteen drops of water, and this solution is injected by means of a hypodermic syringe into the larynx. The needle of the syringe is introduced to the depth of 1—1½ centimeters, above the thyroid cartilage, and five to six drops of the solution are then injected. Two hours after the injection has been made an emetic is administered. Usually the membranes were expectorated after a short time.

If improvement does not follow in a short time the injection must be repeated. Regi, in his case, was forced to inject several times; finally, however, membranes were spit up. Palvadeau considers this method entirely devoid of danger and producing no harm."

Dr. Herrick says: "Soon as I am satisfied there is any membranous deposit, I give two remedies, *Protoiodide of Mercury* and *Kali bichromicum*, in alteration, one hour between doses. I do not go above the third trit. in such cases, and sometimes use the second. I find equally as good effects from using hot, dry flannel to envelope the neck, as any poulticing I have seen tried. I have found no other remedy equal to the above. *Mercury* to change the character of the secretions of the throat so they do not organize into a membrane, and I do not know of a better one to *dissolve* or clear the throat and larynx of the membrane that has already formed, than the *Kal.*"

Dr. Dake's treatment is as follows:—

"1. When called to a case of croup, especially if near its beginning, I prescribe *Aconite*, in water, a teaspoonful every fifteen minutes.

"If the affection is only spasmodic it will require no other remedy. I have seen it yield to the first dose.

"If it is inflammatory, or after four doses of *Aconite* shows no signs of breaking or loosening up, I order a slice of salt pork or bacon, sewed upon thick flannel, applied to the throat from the chin down to the breast bone, to be renewed daily till the croup is gone.

"2. I then prescribe *Spongia tosta*, in water, a teaspoonful alternately with *Aconite*, the doses one half hour apart, the intervals to be lengthened as improvement progresses.

"I order the patient to be kept in bed, free from excitement, in a warm room. I allow nourishing, but not too stimulating a diet.

"These remedies cure nine-tenths of all cases, when persevered with. They should be given steadily, the patient being awakened out of sleep for them at the appointed times.

"3. When the croup is broken, but there remains a hoarseness and seeming dryness of the membranes of the air passages, I give *Hepar sulph.*, in trituration, a dose every two or three hours, returning to the former remedies at night, if there is any tightening up in the breathing or return of the peculiar croup cough.

"4. When there remains an apparent collection of mucus in the air-passages, indicated by a rattling sound, and especially if there is a loose cough with expectoration, I prescribe *Kali bichromicum*, through the day, in water, a dose every two hours, returning if necessary to the former remedies at night.

"5. If the disease does not readily yield, and there is increased difficulty in breathing, especially if there are patches of false membrane visible in any part of the throat, besides the remedies already mentioned, I prescribe a gargle of hot water and alcohol, equal parts, to be used every three hours. In the case of infants, too young to use the gargle, I order a teaspoonful of alcohol in four teaspoonfuls of hot water, to be fed to the child in its place.

"I also have the patient eat crackers or dry bread, or toast, frequently, and allow a more generous diet than before.

"And besides the bacon on the neck, I order the throat rubbed often with the fingers dipped in warm lard, say every three hours.

"If, while using the *Aconite* and *Spongia*, the paroxysms of difficult breathing continue to come, the patient seeming worse at night, I prescribe, at those times, two powders of *Kali bichromicum* (especially where there has been, during the day, running at the nose with considerable coryza), the powders to be taken dry, one hour apart, and then a return to the former remedies.

"But if, during the day, there has been more hoarseness, with dryness of the nasal ducts, and especially if there is any enlargement of the glands of the throat or neck, *Hepar sulph.* is prescribed in place of *Kal.*"

Dr. Hale says:—"I have just conducted two cases to a favorable termination, and will give you the plan I pursued. Both were female children six years of age, of strumous temperament and the subjects of eczema. The disease began insidiously with looseness, partial loss of speech, hoarse, metallic cough, fever, etc. Under the use of *Aconite* and *Hepar sulph.* the children grew worse until it became evident that the membrane was spreading and thickening. From time to time shreds of an ominous character were coughed up, and the respiration became difficult and sibilant.

"At this juncture the patients were placed on *Sanguinaria* (the acetous tincture), ten drops in half a glass of water, a spoonful every half hour, with the use of a spray from a steam atomizer,

used for a few minutes every hour. In a few hours improvement was manifest, and in twenty-four hours the children were out of immediate danger.

"The treatment was continued, however, less energetically, for several days, before I considered them safe.

"For the looseness and weakness of voice *Causticum* and *Iodine* third were given for a week or more, the latter in the atomizer.

"I consider *Sanguinaria* and *Iodine* to be the chief remedies in true membranous laryngitis. In the diphtheritic variety, I should prefer *Bromine* (3) and *Merc. cyan.* (6), with inhalations of *Salicylic acid* or *Bromine* or the *Bromide of Ammonium*."

Dr. Grubeumann, of St. Gallen, who claims to have cured many advanced cases of membranous croup, says: "It grieves me to perceive that frequently the assertion is made, that in true croup we can do but little, and that homœopathy avails nothing where the disease has been growing worse for two consecutive days. Only because my colleagues are accustomed to administer *Iodine*, *Bromine*, *Spongia*, *Hepar sulph.*, in from the second to the fifth decimal, could I explain the failure; for with such dosing most certainly they can cure no membranous croup in the advanced stages. I no longer use *Iodine* and *Bromine* under the fifteenth cent. in such severe cases, and I have rescued many little patients who came to me out of the hands of the allopaths after seventy-two hours, steadily becoming worse. In all such cases, I give ten drops of the remedy in from the fifteenth to the thirtieth cent., in one hundred drams *Aqua distillata*, a teaspoonful at periods of fifteen minutes to an hour.

"I will report one of six severe cases of croup, it being in a well-known family, and coming from Dr. S., who is well known both at home and abroad, and it thereby excited much attention.

"The eight year old boy of Herr B. had been three entire days under the care of Dr. S., and was becoming, rapidly and frightfully worse under his care. I was called at 10 p. m. on the 26th of January, because the parents and their old family physician had despaired of the child's recovery, and with the doctor's consent. For twelve hours the patient had lain, without a minute's amelioration, in a laryngeal stenosis of a very severe type, somnolent, voiceless; the most laborious exertion of the respiratory muscles, and the clavicular fossa sank in at every respiration, so that a hen's egg might have

lain therein. I told the parents that if no well marked alleviation arose within twelve hours from the *Iodine* fifteenth which I administed, death must ensue. Fortunately, after six hours a violent attack of coughing occurred, and he expectorated a tubular formed tough membrane, ten centimeters long, which was followed after an interval by an aggravation (stenotic respiration), and six hours after the preceding, another such expectoration, and so on, until thirty-six hours after my taking the case he had raised half a glass full of membranes, one of which on examination proved to be fifteen centimeters in length. He was now out of danger, and in three days was out of bed."

"Dr. Lilienthal says:—"During the last three years Fukala has treated all his cases of laryngitis crouposa with a two or a two and a half per cent. solution of *Zincum sulphuricum*, either by pencilling or by injection into the larynx. He uses for pencilling a bushy pencil fastened to a flexible holder made of wire. As soon as the first symptoms of approaching croup set in, pencilling is applied. He depresses and carries forward the tongue with a spatula, or spoon, and introduces the pencil over the most visibly erected epiglottis, quickly and repeatedly, into the introitus laryngis, without removing the spatula from the tongue. This has to be done three times a day at first, but as soon as threatening symptoms appear, as difficult, hardly audible breathing, increased action of the respiratory muscles, aphonia, short manifestations of stenosis, the pencilling must be continued hourly, even through the night. It may produce vomiting with the discharge of membranous pieces; the voice returns slowly, and it may take eight or ten days till the children fully recover, but an amelioration is commonly witnessed in the first twenty-four hours.

"Whenever children obstinately object to pencilling, the same solution is used in injections, and for that purpose Tobold's laryngeal syringe (Pl. VI., Fig. 2) is preferable. In both methods it is necessary to use the moment when the child cries, or inspires. In order to prevent disagreeable sequalæ in the stomach, from swallowing part of the injected solution, milk ought to be given freely to the child."

Dr. Loosvelt, in the *Rev. Hom. Belge*, 1878, reports the following two cases:—"On April 13th, 1878, at 6 o'clock A. M., I was

called out into the country to see little Alida Van Rollegem, aged fifteen months. The child, put to bed perfectly healthy, was taken at two o'clock in the morning with severe dyspnœa, accompanied with whistling inspiration, and a raw, hoarse cough. The child frequently put its hand to the larynx, and had also its head bent backwards. On inspection of the throat, the tonsils were found to be covered with false membranes, and the mother, who had already lost one child from croup, was not mistaken, and had given up all hope of saving the child. I prepared at once a *Euphorbium* plaster of the size of a five-franc piece, placed it upon the larynx, and dissolved ten globules of *Spongia* (3) in four ounces of water, of which one spoonful should be given every half hour. Towards evening the dyspnœa had nearly ceased, the cough was more moist from time to time; nearly all deposits on the tonsils had disappeared. On the following day the child was well, and has continued healthy to the present time.

"May 14th, 1878, being called to a little girl, aged ten months, who was suffering with the same symptoms, I applied the *Euphorbium* plaster externally, and gave internally *Iodine* third, six globules dissolved in four ounces of water, a spoonful to be taken every half hour. The result was equally fortunate, and the next day the child was cured without further medication.

"In neither of the cases did the plaster bring forth an eruption, which leads to a belief of a specific action."

Dr. Searle, of Brooklyn, N. Y., says: "I consider *Kaolin* almost specific in membranous croup." After detailing several successful cases, he adds:—"Having obtained these decidedly brilliant results, I speedily made them known to my colleagues in this city, and the remedy has been considerably used. Several cases in which the diagnosis between membranous and highly inflammatory croup was difficult, have yielded to its influence with unexampled rapidity, when other medicines have failed to relieve."

Bala Weiss, of Vienna, reports (*Allg. Med. Central Zeitung, 40, 1880*) the following cases successfully treated by massage: Stenotic manifestations appeared on the third day of a catarrhal laryngitis in a boy, aged five and one-half years. He found the patient with a moderately high temperature, pulse 114, pharynx intensely red, tonsils somewhat enlarged, darkened, without coating;

cough dull-barking, a metallic whistling, respiration short, wheezing, accompanied by a sawing murmur, voice without timber.

The mother took the boy on her lap and fixed the head in a position bent backwards. Weiss sat opposite the child, oiled his hands, united the fingers of both hands on the cervical spine, and made with both thumbs slight strokes, gradually increasing in force, over the laryngeal and tracheal region. The thumbs moved from the edge of the mandibula downwards to the fossa sternalis; after reaching the clavicles, the thumbs are raised up to the chin again without touching the neck. The massage should especially pass over the region of the venæ jug. com. and the lateral regions of the larynx. Its effect was nearly wonderful; breathing immediately became easier, softer and deeper; voice still hoarse, but no more aphony; the child, whose features wore before the expression of anguish, was now pleased and lively, and slept well the whole night.

A boy of six years showed characteristically all the symptoms of laryngeal croup (diagnosis confirmed by Widerhofer). On the third day of the disease laryngo-stenosis well developed. After manipulating for five minutes in the same manner the child became restless and wished to go to bed. This was done, and a bolster, wound together, put under the shoulders, and the manipulations continued, so that with the extended and united fingers of both hands (index, middle and gold fingers) the lateral parts of the larynx were put under massage. After about twelve minutes a severe paroxysm of cough set in, but which did not sound any more so dry and barking, and ended with expectoration of pseudo-membranes. Respiration now more easy, features more pleasant, voice still hoarse. Instead of the emetic, which had been advised, we only used now hot vapors about the room. After two hours, during which the boy felt comfortable, massage was again employed for ten minutes, when the child fell into a quiet sleep with easy breathing. The third massage, towards evening, finished again with a paroxysm of cough and expectoration of pseudo-membranes. The night was relatively good. In the morning the voice had some timber, inspirations were much less hissing and whistling, and the boy in good humor. Massage for five minutes in the morning, for ten minutes in the evening. After five to six days, the child could be considered convalescent.

From *Schmidt's Jahrbucher*, No. 8, 1879, we learn that " The

internal administration of *Apomorphia* has been highly recommended by several German auhorities in the treatment of croup, pseudo-croup and capillary bronchitis. Dr. Smidowitsch, of Tula, reports four cases of croup and acute laryngitis, in which he employed the drug in this way, with very good results. In all these cases very large doses were given. In the case of a boy, one and one-half year old, who was suffering from a severe attack of croup, from six to seven ctgm. were given daily, for five days, while towards the end of the disease a dose of four mgm. could no longer be tolerated. The same patient suffered two and a half years afterwards from a second attack of croup, in which croup-membranes were coughed up. This second attack also terminated favorably under the use of apomorphia, a teaspoonful to a teaspoonful and a half of a one per cent. solution of the drug being administered every hour. The second case reported by Dr. Smidowitsch was also one of croup, while the remaining two were cases of pseudo-croup, or acute laryngitis, with very tough expectoration. All these cases terminated favorably.

CHAPTER V.

AFFECTIONS OF THE BRONCHIA.

Diseases of the bronchia are scarcely less varied and important than those of the larynx. We shall consider in this chapter only those of an inflammatory character, the varieties of which are founded mainly upon the duration, extent, and severity of the inflammation, modified by the amount and character of the secretion, the age and constitution of the patient, and other attendant circumstances. They may be exhibited in tabular form thus:

BRONCHITIS:

1.—Principal Forms:
Acute,
Sub-acute,
Chronic.

2—Specific Forms:
Catarrhal,
Croupous,
Scrofulous,
Putrid,
Congestive,
Estival.

3.—Grade:
Mild,
Common,
Severe.

4.—Seat:
Larger Tubes,
Smaller Tubes,
Capillary Tubes.

5.—Extent:
Partial,
General.

6.—Secretory Condition.
Dry, (*sic.*)
Mucous,
Serous,
Sero-purulent,
Purulent.

7.—Subjects:
Adults,
Infants, (under 2 years,)
Children,
Aged, (senile,)

8.—Character:
Primary,
Secondary,
1st.—To Plethora.
2nd.—To Heart Disease.
3rd.—To Pulmonary Disease.
4th.—To Abdominal Vascular Obstruction.
5th.—To Swelling of the Bronchial Glands.
6th.—To Bronchial Irritation.

We shall endeavor to simplify the subject by bringing together most of these particulars under the two heads of acute and chronic bronchitis.

I.—ACUTE INFLAMMATION OF THE BRONCHIA.

BRONCHITIS ACUTA: CATARRH FEVER.

There are three distinct grades of acute bronchitis, corresponding, for the most part, to the size of the air passages involved in the inflammation. When confined to the larger tubes, the affection is generally so mild as seldom to come under the care of the physician; it is then called a simple *catarrh*, or *cold*. This form of the disease is commonly associated with coryza, or cold in the head. There is

generally some hoarseness, cough and febrile excitement, together with more or less soreness of the fauces, and of the upper and anterior parts of the chest. The cough is at first short and dry, but soon becomes loose, when the symptoms abate.

1.—Simple Acute Bronchitis.—When the lining membrane of the smaller, or medium-sized bronchia becomes inflamed, we then have *catarrh fever*, the most common form of acute bronchitis. This is generally developed out of the milder form of the disease just mentioned, by the extension of the inflammation from above. In addition, therefore, to the symptoms already noticed, there is a feeling of heat as well as soreness in the upper and anterior parts of the chest, together with a sense of weight or constriction, accompanied with more or less difficulty of breathing. When severe, the cough is frequent and harrassing, the heat and soreness greatly increased, and the dyspnœa more urgent. We then have, also, well-marked febrile symptoms, such as headache, quick pulse, hot dry skin, furred tongue, and, occasionally, more or less nausea or vomiting. The fever generally remits in the morning and increases towards evening. The cough, which at first is short, hard and dry, or accompanied only by a slight expectoration of glairy mucus, after the lapse of a few hours, or days, is usually attended by a considerable increase of the bronchial secretion, which gradually changes from a transparent, frothy and saltish mucus, to one that is whitish and opaque, and at last becomes thick, purulent and bland. Accompanying this change in the expectoration, there is a general abatement of the other symptoms; the cough becomes milder and less harassing, the soreness diminishes, the dyspnœa abates, and the febrile symptoms also subside. Attacks of this character generally run a course of some five, ten or fifteen days, according to the severity of the case; the cough generally disappearing with the subsidence of the acute symptoms, but sometimes remaining for a considerable period afterwards, in which case it is apt to become chronic.

The symptoms and physical signs belonging to each stage of the disease, may be summarized as follows:

First, or Dry Stage.—Chilliness, followed by frequent pulse and febrile symptoms; pains below the sternum and in the limbs; hoarse dry cough; feeling of oppression and tightness in and about the chest; hurried breathing, with unimpaired resonance on percussion;

rhonchal fremitus; feeble vesicular murmur, mixed with rhonchus and sibilus; puerile breathing in healthy parts of the lung; vocal resonance not materially altered. The anatomical appearances of this stage consist chiefly in hyperæmia of the mucous membrane of the bronchial tubes, with some degree of swelling and dryness of the surface.

Second, or Moist Stage.—Cough with expectoration of frothy, transparent mucus, mixed with air-bubbles of various sizes, and occasionally tinged or streaked with blood; when the smaller tubes are implicated, or the disease is general, there is urgent dyspnœa, often amounting to orthopnœa; increase of febrile symptoms and lividity; restlessness at night; physical signs as in first stage, with the addition of mucus rales. The post-mortem appearances correspond with these symptoms; the mucous membrane of the bronchia being red and swollen, and the tubes filled with frothy adhesive mucus.

Third Stage.—The symptoms of the third stage differ, according as the termination is favorable or unfavorable. In the former case, there is a gradual remission of the symptoms; the expectoration becomes thick, greenish, and opaque, and sometimes nummulated; and the sonoro-sibilant and mucous râles diminish in amount, with return of normal vesicular breathing. In unfavorable cases, on the other hand, the dyspnœa becomes very urgent, with signs of impending suffocation; there is less and less cough, with absence of expectoration, profuse cold sweats, delirium, drowsiness, and sinking; finally, in addition to the physical signs of the second stage, tracheal râles may be heard.

2.—Capillary Bronchitis.—The ordinary grades of acute bronchitis are seldom fatal; but when the inflammation penetrates deeply into the bronchia, and especially when it reaches the ultimate branches of the "bronchial tree," the danger becomes very great. The inflammation is then not only more extended but more severe. The capillary tubes being involved, the air enters them with greater difficulty, and, in many cases, the dyspnœa becomes extreme. This form of the disease, commonly called *capillary bronchitis*, or *suffocative catarrh*, is most frequently met with at the extremes of life, or when the vital powers are the feeblest; hence it is most common during infancy and childhood, and in old age. (*Catarrhus Senilis.*) Sometimes, in these cases, the dyspnœa is so great as to destroy life at

once; in other cases, after secretion sets in, the mucus is so abundant as, of itself, to greatly aggravate the cough, impede the respiration, and prevent the due æration of the blood. The face then becomes pale, or livid and purple, the pulse feeble and frequent, the skin cool and moist, or cold and clammy, and the countenance anxious and oppressed. If the patient is an infant, it abandons the breast, the pulse becomes weak, rapid and irregular, the breathing extremely hurried, the cough suffocative, and, in fatal cases, coma, stupor, or delirium, and sometimes convulsions, quickly supervene. When, however, recovery takes place, the fever gradually declines, the paroxysms of dyspnœa grow less and less violent, the cough becomes milder and looser, although, as in the less severe cases, the last mentioned symptom often continues for a considerable period after convalescence sets in.

3. Bronchitis Crouposa.—Bronchitis is a frequent complication of other diseases. Of these, the most common are, measles, whooping-cough, pneumonia, consumption and croup. Indeed, there is one form of bronchitis which is not only sometimes secondary to the last-mentioned disease, but is similar in its nature, namely, *pseudo-membranous bronchitis*, or, as it is sometimes called, *bronchitis crouposa.* In these cases, the croupous process seems to localize itself, so to speak, on the mucous membrane of the bronchia, instead of its ordinary seat, the larynx and trachea, (see *Croup.*) The symptoms of this form of bronchitis are generally those of the common catarrhal variety, with unusually severe paroxysms of dyspnœa—greater even, as a general rule, than those of capillary bronchitis, to which, indeed, so far as the rational symptoms are concerned, it bears a striking resemblance. The dyspnœa in these cases is mainly owing to the deposition of false-membrane on the surface of the mucous lining of the bronchia, which interferes mechanically with respiration, by blocking up the air-passages. The patient gasps for breath, leaning backward and stretching out the neck for the purpose of facilitating respiration. The cough is muffled and painful; the expectoration, if any, is more or less mingled with blood, and generally consists of thick viscid mucus and coagula, mixed with minute fragments of false membrane; sometimes the expectoration contains perfect casts of the bronchial ramifications. This is the most dangerous, but happily the most rare, form of bronchial inflammation.

Diagnosis.—During the early stage of the disease, percussion is clear in every part of the chest. As the disease advances, the resonance slightly diminishes, until in some cases, the dullness may become considerable, though not so great as to be mistaken for that of pneumonia. The sonorous and sibilant râles are heard in the first stage; a little later the mucous râles are intermingled with the dry; subsequently, when the stage of secretion is fully established, the mucous râles predominate, though not always to the entire exclusion of the dry. In capillary bronchitis, the dry sounds generally predominate in the upper part of the chest, and the mucuos râles in the lower part—a diagnostic sign of considerable importance in difficult cases. Croupous bronchitis is distinguishable from capillary bronchitis, with which alone it is liable to be confounded, by the muffled character of the cough, the extreme difficulty of breathing, and, when present, the characteristic expectoration.

Treatment.—The following synopsis embraces the leading remedies:

1. *In general*—Acon., Ant. tart., Ars., Bell., Bry., Cact., Cham., Hepar sulph., Ipec., Merc., Nux vom., Opi., Phos., Puls., Rhus tox., Spong., Verat. alb.

2. *Capilliary Bronchitis.*—Acon., Ant. tart., Bell., Hepar sulph., Ipec., Merc., Kal. hydriod., Spong., *in children*, (*Infantile*),—Ant. tart., Ars., Bar. c., Bry., Phos., Rhus tox., Verat. alb., *in the aged* (*Senile*).

3. *Croupous Bronchitis.*—Ars., Brom., Hepar sulph., Iod., Phos., Sang., Spong.

Therapeutic Indications.—*Aconitum.*—Hot, dry skin; high fever; red face and eyes; hoarse, rough voice; wheezing and oppressed breathing; soreness of the chest; thirst; short dry cough; tickling in the larynx; sense of weight behind the sternum; constriction of the chest, preventing full inspiration; burning pains along the trachea; nausea and vomiting during the paroxysms of coughing; cough attended by sharp, piercing or stabbing pains in the chest; sensation of rawness or burning in the bronchial tubes; dyspnœa, with frequent paroxysms of coughing, especially at night; cough accompanied with a thin frothy expectoration, or with expectoration of gelatinous mucus.

This remedy is particularly indicated in the first or incipient

stage of all catarrhal affections, and for all inflammatory disorders of the respiratory passages, especially when acute, or when attended with high irritation or fever; moreover, it is equally well adapted to these conditions whether the cough be dry or moist.

Antimonium tart.—Rattling cough, with accumulations of mucus in the bronchia; spasmodic, suffocative coughs, with wheezing respiration and great difficulty in breathing; also when the cough is attended with nausea or vomiting.

This remedy is indicated in all cases in which there is a great obstruction to respiration from accumulations of mucus in the bronchia, in capillary bronchitis, and in sub-acute and senile cases, especially when the cough is spasmodic, suffocative, or rattling.

Belladonna.—Coughs attended with congestions to the face and head; dry, spasmodic attacks of coughing, worse at night, provoked by titillations in the trachea or bronchia; catarrhal coughs accompanied with high fever, sore throat, thirst, short, anxious respiration, or with stitches in the chest, especially in sensitive and irritable patients.

This remedy is principally indicated in erethistic forms of bronchial inflammation, especially in the early stages, and when there is a tendency to cerebral and pulmonary congestions.

Bryonia.—Dry, concussive cough, with scanty, tenacious, whitish, or slightly bloody, mucous expectoration; dyspnœa, with stitches in the side; congestions to the head and chest; sensation of dryness and soreness in the trachea and bronchia; rapid, difficult and anxious respiration, accompanied with high fever and scanty expectoration.

This remedy is particularly adapted to the second stage of catarrhal affections, especially when the expectoration is scanty, and only the larger tubes are affected.

Chamomilla.—Wheezing and rattling in the larger bronchia; cough from tickling in the larynx and trachea; tenacious mucus in the larynx, with convulsive cough, worse at night; catarrhal hoarseness, with coryza, and accumulations of viscid mucus in the throat.

Particularly adapted to the catarrhal coughs and secondary bronchitis of women and children, especially after measles.

Dulcamara.—Loose, hoarse cough, with mucous expectoration; also, barking, panting, or convulsive coughs, excited by deep inspira-

tion; or short, hacking coughs, with difficult expulsion of phlegm.

This remedy is best suited to catarrhal cases, especially such as are caused by getting wet, or by prolonged exposure to cold and damp.

Hepar sulph.—Dry, spasmodic, barking cough, with a wheezing sound over the whole thorax without any real mucous râles; it is a steady cough, only at intervals increasing to frightful paroxysms with danger of suffocation; it is excited by every attempt to draw a long breath and only results in the expectoration of a yellowish, tenacious mucus." (Bahr.) "Rattling, choking cough, worse after midnight," (Guernsey.) "Cough, with hoarseness all the time; worse before midnight, or towards morning." (Hering.)

Hepar is a reliable remedy in all those cases of acute bronchitis in which, after Ant. tart., Ipec., or Spong., the mucous rales still predominate; also, in croupous bronchitis.

Ipecacuanha.—Loud mucous râles in the bronchial tubes; dyspnœa and wheezing respiration; dry cough, excited by titillation in the larynx or bronchia; suffocative cough, with lividity of the face, occurring in paroxysms, caused by an excessive secretion of mucus, or by spasm of the glottis, and sometimes ending in vomiting.

This remedy is highly useful in the spasmodic and wheezing catarrhal affections of children, such as occur in croup, whooping-cough and measles.

Kali bic.—Hard, choking, croupy or wheezing cough, with expectoration of tough stringy mucus; insupportable tickling in the larynx; hard cough, with soreness and oppression of the chest and copious expectoration; wheezing, panting cough, worse in the morning.

This remedy is invaluable in croupous and capillary bronchitis.

Nux vomica.—Dry, short hacking cough, with tightness of the chest and soreness of the lungs; violent spasmodic cough, inducing headache or vomiting; tenacious mucus in the throat and bronchia; congestion of blood to the head and chest; palpitation of the heart and dyspnœa; occasional discharges of blood from the nose and mouth during violent coughing; aggravation of the cough by mental emotion and by exercise.

Nux is particularly adapted to the formative stage of catarrhal affections, which it frequently removes as by magic.

Phosphorus.—Hoarseness or aphonia, with cough, and soreness or shooting pains in the larynx; dry hollow cough, excited by titillation in the larynx, or by laughing, talking, eating or drinking; fatiguing cough with expectoration of tough mucus; dry irritative cough, worse in the evening.

Phosphorus is a reliable remedy in almost every form of bronchitis attended with dyspnœa, especially when complicated with inflammation of the substance of the lungs.

Pulsatilla.—Loose cough, with copious thick muco-purulent expectoration; violent cough, with difficult expectoration, worse in the evening, or on lying down.

This remedy is of frequent service in bronchial affections after the more acute symptoms have been subdued and expectoration is fully established, especially in lymphatic constitutions.

Rhus tox.—Hard, dry tickling cough, worse in the evening and before midnight; shooting pains in the head, chest, stomach and loins; cough attended with hoarseness and rawness of the throat, fever, restlessness and dyspnœa.

Rhus is indicated wherever a general catarrhal condition exists, especially if there be any tendency to rheumatism or pneumonia.

Spongia.—Hoarse, ringing or sibilant cough, frequently having the sound of a saw; great dryness of the larynx, with wheezing respiration, hoarseness, and transient aphonia.

This remedy is particularly suited to croupal bronchitis of both children and adults.

Clinical Observations.—Prof. Hoyne gives the following indications for Belladonna:—"Bell. is serviceable in acute bronchitis with high fever, slight thirst and inclination to perspire; coughing causes much pain in the pit of the stomach; the patient is very drowsy, but cannot fall asleep; starting and jerking when sleeping; aggravation of the symptoms in the afternoon and at night. Children cry with pain when they cough."

Dr. Hempel says of *Aconite*, "In acute bronchitis no better remedy can be used." Dr. Hughes agrees with Hempel, and says, "It is rare that any medicine but Aconite is required if taken in time." Dr. Ruddock says, "If administered early and frequently it will materially shorten the attack and perhaps alone prove curative." Bæhr, on the other hand, deems Aconite unsuitable to this class of

cases. He says: "We have on several occasions expressed our doubts concerning the propriety of recommending Aconite for catarrh. A common catarrhal fever is not the province of Aconite, and if we should be told that Aconite has modified this fever in so many cases, we suggest that this improvement might likewise have taken place spontaneously without Aconite. How many catarrhs commence in the first twenty-four hours with a feeling of anxiety, a frequent pulse and an extraordinary rise of temperature, and yet run their course afterwards without any fever. This should not be attributed to the action of Aconite. A remittent fever is least suitable to this medicine. Where the fever, as is often the case in acute bronchitis, is continuous, the skin is dry and the heat is not mingled with chilly creepings, Aconite is in its place. The symptomatic indications are most fully met in the incipient bronchitis of children. If the objection is raised that the diagnosis may be doubtful at first, and that hence Aconite ought to be opposed to the general febrile symptoms, we meet it with the assertion that in every attack of bronchitis, the fever has at first a catarrhal, not an inflammatory type."

Kafka says of croupous bronchitis:—"Only when the disease is recognized in time, and does not set in too stormy, or when the exudation is not too abundant and expectoration is yet in time, our prognosis may be favorable; in children and old people, bronchitis croupposa is mostly a fatal disease. *Phosphorus* gives us an albuminous, gluey, pneumonic exudation, and as long as there are no symptoms of blood intoxication by carbon in consequence of the dyspnœa and the disturbed circulation it is well enough to rely on it, but if *after a few hours* no amendment takes place, we may be sure that the exudation is of a croupous character, and Iodine 3 alone is able to help us in such cases. *Iodine stands in the same relation to croupous exudation as Phosphorus to albuminous exudation. Bromine 2, and Sulphur 6*, are also reliable remedies in the treatment of bronchitis crouposa."

According to Lilienthal, "Henderson has published three cases of suffocative infantile bronchitis, two of which recovered; for the first case he used Acon., Ipec., and Spong., with occasionally, Bell. and Cham. In the second case Acon., Spong., Hep. In the fatal case Acon., Cham., Bell., Phosph., Spongia. It seems that all these cases were secondary from extension of laryngeal or tracheal croup."

Dr. Thomas Nichol says of capillary bronchitis:—"*Tartar emetic* is unquestionably the great remedy for this dangerous form of bronchitis, and all who have used it carefully can endorse the recommendation of Dr. Hughes, "perfectly homœopathic to both the local and the general condition." I have almost invariably relied upon it single-handed, and have seen desperate cases recover under its use. Kreussler says that he has "found it very efficient in the last hours when the patients struggled hard." Bæhr remarks that "it is really the second stage of the catarrhal process which is adapted to the curative action of this drug," but my experience is that it should be given promptly and without delay, as soon as the disease is diagnosed. Aconite is the only remedy which can compare with it in value in this disease, and Aconite has almost always been given in the earlier stages of the malady.

This remedy then is indicated by severe spasmodic suffocative cough, with wheezing respirations and marked dyspnœa; also by rattling cough which ends with vomiting of thick white mucus; also when the cough suddenly ceases, from weakness or from any other cause. The actions of the patient seem to show that it is suffering from oppression at the chest, and the mucus rhoncus, indicating a very copious accumulation of mucus in the bronchial tubes, is one of the leading features of the case. This accumulated mucus forms a mechanical obstruction to respiration, and accordingly we have a group of symptoms of carbonic acid poisoning, more or less pronounced, great anxiety and agitation, pale and bloated face, coma or delirium with coldness of the extremities. Profuse cool sweat not followed by relief, and a disposition to vomiting and diarrhœa, would be additional indications. The cough is aggravated by speaking, by eating, and by the recumbent position.

This remedy seems to me to act best in 3rd or fourth trituration, though some writers, as Marcy and Meyhoffer, recommend it to be given much lower, even in emetic doses. Bæhr's idea is the true one, "it must not be given in too small doses, nor large enough to produce emesis."

Dr. Hughes says of *Rumex*, "it has been an admirable remedy in my hands in many cases of acute bronchial affections. I recall one case in which there was dry, tickling, spasmodic cough, with tenderness in the larynx and trachea, rendering the cough quite painful. I have used it only in the 30th potency." I have found *Arum dracontium* to be highly efficacious in similar cases.

2.—CHRONIC INFLAMMATION OF THE BRONCHIA.

BRONCHITIS CHRONICA; BRONCHIAL PHTHISIS.

Chronic bronchitis is generally secondary to some other disease, either succeeding to the acute form, or else—and this is generally the case with children—commonly following measles, whooping-cough, variola, or some cutaneous disorder.

Symptoms.—In its mildest form, the only noticeable symptom is an habitual cough, attended by a moderate amount of expectoration, which generally diminishes during fine, and increases during cold and damp weather, sometimes disappearing altogether during the former, only to reappear during the latter; hence the disease is most prevalent during the spring and winter. It occurs at all ages, but more especially in advanced life; indeed, but few, comparatively, of the aged are entirely exempt from it.

The severer forms are generally attended by more or less dyspnœa, heat and soreness in the chest, occasional pain, and some febrile movement, especially towards evening, though as a general rule the disease is not accompanied by fever. The cough is generally troublesome, but loose, the expectoration being commonly somewhat copious, and consisting of a whitish or grayish mucus, sometimes streaked with blood. Occasionally the sputa contain whitish opaque particles (*pituita*) mixed with the phlegm. Sometimes the expectoration is decidedly purulent, and in some cases it appears to consist of real pus—forms which are sometimes called *scrofulous*. Cases of this character sometimes assume the most formidable aspect. The copious purulent expectoration produces great emaciation and debility, accompanied by night sweats, hectic fever, dyspnœa, and, in fact, all the rational symptoms of consumption. (*Bronchial phthisis*). Indeed, such cases are frequently mistaken for pulmonary phthisis, and though commonly less rapid in their course, are generally no less surely and progressively fatal.

Of the two principal forms of chronic bronchitis, one is characterized by the sputa being expectorated with great difficulty, consisting of small, grey, semi-transparent pellets, and tending towards emphysema; in the other the sputa are abundant, muco-purulent, and brought up with ease. Dilatation of the bronchia is frequently associated with the latter. The cough generally comes on at the ap-

proach of winter, following the course of former attacks. There is always more or less dyspnœa and lividity of surface, and, as already stated, in some cases the symptoms resemble those of pulmonary phthisis, as wasting, with night sweats and hectic.

Physical Signs.—Feeble respiratory murmur, obscured by rhonchus, sibilus, and mucous râles. Resonance increased or diminished, according as emphysema or collapse of lung and consolidation predominate, the latter most marked at the bases, the former at the inferior part. Rhonchal fremitus can generally be felt. Respiration more or less abdominal.

Anatomical Appearances.—Bronchial tubes frequently dilated. Mucous membrane thickened, uneven, sometimes ulcerated, and covered by a thick, puriform secretion, or sparingly coated by a tenacious, glairy, semi-transparent mucus.

Diagnosis.—Careful attention to the physical signs will always enable us to distinguish scrofulous bronchitis, or bronchial phthisis, from every other form of bronchial affection. In simple chronic bronchitis, with which it is liable to be confounded, the resonance on percussion is generally equable in every part of the chest, while in the scrofulous form the resonance and respiration are to a greater or less extent either bronchial or cavernous. The predominant râle is the mucous, the sonorous and the sibilant being occasionally heard. The respiratory murmur is generally distinctly audible, being often puerile, though sometimes obscured. The râles are best heard just before a paroxysm of coughing, and the respiratory murmur immediately afterwards.

The diagnosis between bronchitis and incipient phthisis is of the highest importance. In the former the cough commences suddenly, and is usually ushered in by coryza and feverishness; in the latter the cough commences gradually without marked febrile disturbance or coryza, and is frequently preceded by loss of flesh and strength. The cough in bronchitis is accompanied, almost from the first, by expectoration, which is generally abundant, frothy or mucopurulent, and not often stained with blood; in phthisis, on the other hand, the cough is generally dry and hacking at the commencement, followed by the expectoration of a thin mucous fluid, which soon becomes thick and opaque, or is slightly streaked with blood. In bronchitis the elevation of temperature is not particularly marked

at night, while it is the reverse in phthisis. In bronchitis there is a feeling of tightness and rawness or burning behind the sternum, which is aggravated by coughing; but in phthisis the pain is generally of a wandering character about the chest, especially under the clavicles or between the shoulders. In bronchitis there is no microscopic evidence of destruction of lung tissue, while in phthisis the microscope exhibits yellow elastic fibres, the debris of lung tissue, in the sputa.

Again, in bronchitis the morbid physical signs usually predominate in the lower lobes, and exist equally on both sides of the chest; they are of temporary duration, and subside gradually and equally on both sides of the chest; in phthisis, on the contrary, the morbid physical signs are usually confined to the upper lobe of the lung, and are often limited to one side of the chest; they are very persistent, and even when met with on both sides at first, are apt to subside partially or wholly on one side, whilst they continue or even increase on the other. Finally, in bronchitis there is no marked hereditary tendency, nor is the disease confined to any particular time of life; but in phthisis the family history and general appearance of the patient often assist us in arriving at a definite conclusion; the disease is most frequent about puberty. It must be confessed, however, that scrofulous bronchitis often bears a very striking resemblance to phthisis, so far as the rational symptoms are concerned, and then the diagnosis can only be determined by the presence or absence of the physical signs peculiar to each.

Treatment.—The following synopsis embraces the remedies usually required in the treatment of chronic bronchitis:

1. *In general*,—Amm. carb., Ant. tart., Ars., Bar. c.. Cact., Caust., Chin., Con., Dulc., Graph., Hepar sulph., Igna., Ipec., Iod., Kali c., Lach., Merc., Nat. mur., Nux vom., Phos., Rhus tox., Rumex., Seng., Sil., Sol., Spong., Zinc.

2. *Scrofulous Bronchitis*.—Bar. carb., Calc. carb., Con., Hepar sulph., Kali bich., Lyc., Merc., Phos., Rumex., Sep., Sil., Stic., Sulph.

Therapeutic Indications.—*Arsenicum*.—Dry cough, with burning in the larynx, or with titillation in the larynx and trachea; dry, hoarse, spasmodic, or short and hacking cough, especially at night; violent and fatiguing cough, with soreness of the throat and

chest, with or without scanty, difficult, tenacious mucous expectoration, sometimes streaked with blood; suffocative paroxysms of violent dyspnœa, worse at night, or when lying down; great weakness and emaciation, with trembling of the limbs, or with stiffness, swelling and pains in the joints and limbs.

Arsenicum is particularly adapted to those cases of bronchial inflammation which are complicated with, or secondary to, chronic laryngeal disease, especially in debilitated states of the system.

Calcarea carb.—Dry, hacking, or continuous raw cough, with hoarseness, especially at night; cough excited by titillation in the larynx, or by the sensation of a plug in the throat; expectoration of thick, fetid, yellowish phlegm; dyspnœa, with stitches in the chest, caused by accumulations of thick, putrid matter in the bronchia; chronic hoarseness.

This is the most important remedy in scrofulous bronchitis, and in all chronic catarrhs connected with a tuberculous condition of the system.

Carbo veg.—Paroxysmal or spasmodic cough, attended with profuse muco-purulent expectoration, consisting of yellowish or greenish matter of an offensive odor and taste; voice rough and hoarse; great weakness and prostration; circulation everywhere impeded; skin cold and damp; face and extremities blue and cold.

This remedy is specially adapted to old and neglected chronic cases, particularly when the vital powers are greatly impaired, and the patient much reduced.

Causticum.—Dry, short, hacking cough, caused by laryngeal irritation; loud, rattling cough, or hollow cough, with soreness of the chest; dry, tormenting cough, worse at night, with more or less dyspnœa and rattling of mucus in the chest.

Causticum is a useful remedy in spasmodic bronchial coughs, in influenza, and in chronic bronchitis connected with neurotic morbid processes, especially when giving rise to weakness of the voice or to complete aphonia.

China.—Dry, spasmodic cough, with soreness in the throat and lungs; suffocative cough, worse at night; expectoration of clear, tenacious, or bloody mucus; cough attanded with bilious vomiting, purulent expectoration, or hæmoptysis; cough evoked by talking, laughing, eating or drinking, or by deep inspirations; cough with

expectoration during the day, or in the evening, but absent in the morning and at night.

China is particularly indicated after hemorrhages, and where there is great debility.

Conium.—Dry, tickling cough, excited by titillation or itching in the throat or behind the sternum; periodical convulsive cough, with hoarseness, and a feeling of fulness in the chest; cough increased towards evening and by the recumbent position; catarrhal fever, with nightly exacerbations; suffocative cough, with flushed face; cough evoked by talking, laughing or exercise.

Conium is useful in secondary bronchitis, especially when connected with whooping-cough, asthma or measles.

Cina.—Cough, dry or with scanty expectoration, high fever, pale face, moaning and starting in sleep, dyspnœa, with hurried respiration, and other evidences of verminous irritation; hoarse or hollow cough, especially in the morning and after rising; catarrhal cough, with coryza, bitter taste in the mouth, and vomiting.

This remedy is specially adapted to children, particularly when affected with irritative catarrhal fever, or scrofulous bronchitis.

Drosera.—Spasmodic and paroxysmal coughs, with or without a greyish, yellowish or greenish expectoration; hoarseness, with dry, rough, scraping laryngeal cough, occurring in successive paroxysms; fatiguing, shaking coughs, occurring chiefly at night; spasmodic and paroxysmal coughs, attended with eructations or vomitings of mucus, or of food, congestion to the head and face, bleeding from the nose, violent straining.

This remedy is well adapted to bronchial catarrhs of a neurotic character, especially the senile; also some forms of secondary bronchitis, especially those connected with pertussis.

Lycopodium.—Tickling in the throat; loud râles with scanty expectoration of gray, saltish mucus; nightly exacerbations.

This remedy is suitable for old people, especially if the disease has become complicated with emphysema or dilatation of the bronchia.

Manganum.—Spasmodic cough with difficult expectoration; diurnal cough; sputa inspissated, of a yellowish or greenish color, and raised with great difficulty.

Mercurius.—Hard, fatiguing cough, with shooting pains in the

chest, especially at night; frequent perspiration; tickling, or a sensation of dryness and heat in the bronchia; expectoration stained with blood; voice rough and hoarse; dull aching pains in the side and shoulder; congestion to the head and chest.

Sanguinaria.—Cough with coryza, followed by diarrhœa; tormenting cough, with or without expectoration, with pains in the chest, and circumscribed redness of the cheeks; dyspnœa, with short, panting breathing, quick pulse, and defective capillary circulation.

Sepia.—Dry, spasmodic cough, or loose cough with copious expectoration; worse in the morning, or in the evening after lying down.

Sepia is frequently of great service in chronic bronchial affections, especially when the catamenia are deranged, or when occurring in scrofulous constitutions.

Sulphur.—Hoarseness and aphonia, especially in the morning; short dry hacking cough, with dryness of the throat; violent cough with stitches or pain in the chest; accumulation of mucus in the bronchial tubes; loose cough, with expectoration of thick mucus; pain and fullness in the head and chest, with palpitation of the heart and vertigo, caused by coughing; spasmodic constriction of the chest, with nausea and retching to vomit; aggravation of the symptoms by lying down, and by cold, raw, damp weather.

Sulphur is always of great value in all very obstinate and neglected bronchial affections, whether moist or dry.

For additional remedies see the THERAPEUTIC INDICATIONS at the end of the preceding section.

DIET AND REGIMEN.—The diet in *acute* bronchial affections should consist of light, unstimulating articles, such as jellies, water-gruel, gum-water, barley-water, toast-water, beef-tea, etc.; in *chronic* bronchitis, on the other hand, the diet should be of the most liberal and nourishing character, including oysters, fresh scale-fish, soft-boiled eggs, milk, mush, beef-steak, good home-made bread with fresh butter, and a moderate allowance of fresh vegetables*. Proper attention, also, should be paid to the clothing, ventilation and temperature of the chamber, exercise, etc.

CLINICAL OBSERVATIONS.—"Dr. Moritz has communicated

*According to Henke, a bronchitic patient loses by sputa in twenty-four hours 1. 1 to 2. 3 per cent. of the solid substance used up in the body when hungry, and 0, 6 to 1, 2 per cent. when well nourished.—*Zeitschr. F. Biologie, XI. I.*

to the St. Petersburg Medical Society the results of his trials of *Carbolic acid spray* in various forms of bronchial catarrh, relating several examples of its utility. Since he had much to do with this spray he found that bronchial catarrh, to which he was formerly much subject, either ceased to appear or was soon cut short. In as small a room as possible he causes half a pound of a two per cent. solution of the acid to be sprayed per diem, the night being the time especially to be preferred."

Dr. Hale says of *Sanguinaria*, "In its powers over chronic bronchial or laryngeal coughs, it rivals Lycopodium and Sulphur. It relieves and often cures, coughs with chronic dryness in the throat, and sensation of swelling in the larynx; continual severe cough without expectoration, with pain in the breast, and circumscribed redness of the cheeks;' 'cough, with coryza, then diarrhœa.' This last symptom is an important indication for the use of Sanguinaria. After a severe cold, or undue exposure, some persons are attacked with coryza, catarrhal headache, severe pains in the chest, with tightness of breathing, and dry, harassing cough, all of which subsides upon the recurrence of diarrhœa. In such cases Sanguinaria is eminently indicated, as it causes a similar group of symptoms."

Dr. Hoyne prescribes *Belladonna* "in chronic bronchitis when a sensation of dryness in the windpipe and an annoying tickling cough have been induced by exposure to cold wind or from too much talking."

Drs. Ringer and Morrill (allopathists,) say they have employed *Tar*, in two-grain doses, made into a pill, every three or four hours, in bronchial catarrh and winter coughs, with marked success. From October to January inclusive, its effects were watched on twenty-five patients, whose ages varied from 34 to 70. All these patients had suffered several years from winter cough, lasting the whole winter.

These patients suffered from paroxysmal and violent cough, each attack lasting from two to ten minutes—recurring ten or twelve times a day, and breaking their rest at night. Expectoration abundant, frothy, purulent. Breathing short on exertion, but most could lie down at night without propping. The physical signs showed a variable amount of emphysema, with sonorous and sibilant rhoncus, occasionally a little bubbling rhoncus at the base. These patients

usually began to improve from the fourth to the seventh day; the improvement rapidly increased, and in about three weeks they were well enough to be discharged. The improvement was so decided, that even those patients who, in previous years, had been confined to the house during the whole winter, returned to their work. On discontinuing the tar, relapses often occurred in a week or two, but on re-administering the medicine, relief was again obtained.

We have for years been in the practice of administering tar in small doses, generally in the form of *Tar Water*, in cases similar to the above, with the greatest benefit; also in chronic laryngeal troubles. (*Hart.*)

Dr. Hale says that *Sticta* "greatly relieves the coughs of phthisis, laryngitis and *bronchitis*. The cough is racking, incessant and wearing, lasting hours, and causing great exhaustion."

The same author says that he has "for many years made extensive use of the *Balsam of Peru* in bronchial affections, and has seen most gratifying results in coughs, with copious expectoration of thick, yellow, green and fœtid pus. This condition occurs commonly in old people, and scrofulous subjects, and may arise from laryngitis or *bronchitis*, or neglected catarrh of those organs."

Dr. McLaren, of Chicago, gives the following interesting case: "During the summer of 1870, I was called to a child of Mr.——, South Park Avenue, which had been treated by Drs. M.D. and P., allopathic physicians. Under the first M. D., the child had been treated for typhoid fever, lasting eight weeks. During the two weeks following, and previous to my being called in, Drs. D. and P. were called in consultation quite often. At the expiration of the tenth week, the doctors having said that the child could not live many days, they were dismissed, and I was summoned. I found a boy, aged 12, sitting in a rocking chair, so emaciated and weak that he could not lift his hand, and when his head rolled to one side the nurse was obliged to restore it. The fever had almost left him some days previous to my first visit, but he had a very distressing cough with greenish expectoration, almost constant fever, night-sweats and copious diarrhœa, abdomen extremely sensitive to pressure, urine dark red and offensive. I gave Phosph. 30. Nitric acid 6x.

"The next day I saw no improvement. Continued the medi-

cine, however, and in addition, ordered him to be bathed in a weak solution of Nitric acid.

"Third day. The mother remarked that his urine was free from the offensive odor. Medicines continued. Fourth day: cough modified: expectoration not so profuse. Sixth day: improving. Eighth day: marked improvement: Phos., alone, was indicated, and I gave it in the same potency. Tenth day: gradual improvement, cough better: expectoration scanty, but the diarrhœa was very profuse, watery, offensive, and more frequent during the night. This soon yielded to Ars. 3x. The child now seemed to be free from disease for a week, though a mere skeleton. The father would take him out every day in a little carriage, and was often met by one of the above M.D's., who still persisted in saying that the child was dying of consumption, and that homœopathy was a humbug. *Even this did not discourage me.* The night-sweats returned with extreme prostration, and a coarse incessant cough, which came on early in the morning and continued till 8 A. M. I gave Phos. 6x. and, for the cough, Laurocerasus 3x. Cough left him on the third day, after taking Laurocerasus.

"The night-sweats with hectic flush gave me much uneasiness, but other symptoms in connection pointed so unmistakably to Phos. that I gave the 3rd for a week, with a good nourishing diet, and with Cæsar I could say, *Veni*, *Vidi*, *Vici*. I did not give any more medicine, but had a watchful eye over the little fellow, (in all six weeks), and he has been in excellent health up to the present."

Dr. Duhring says: "I am in my 62d year, and for some time have been a great sufferer from "Chronic Bronchitis," that was accompanied with frequent rattling of the mucus, both through the day and at all hours of the night: oppression in breathing, with a spasmodic cough and expectoration of mucus, also frequent attacks when attempting to go up and down stairs. Various remedies proved useless until I concluded to try some "mother tincture" of *Cactus grandiflorus* that I had accidentally prepared last year, and this at once restored my health." This case was undoubtedly secondary to heart disease.

3.—BRONCHIAL INFLAMMATION WITH SCANTY MUCOUS SECRETION.

CATARRHUS SICCUS; DRY CATARRH OF LÆNNIC.

Although, as remarked by Watson, authors have endeavored to draw nice distinctions between different species of bronchitis which present no such differences in the symptoms as to entitle them to a separate classification, there are at least four varieties of the affection, namely, pseudo-membranous bronchitis, the so-called *dry* catarrh of Lænnic, the *pituitous* catarrh of the same author, and the *inveterate*, *senile*, or *profuse muco-purulent* catarrh—which, in a therapeutic, as well as in a pathological point of view, are sufficiently distinctive to merit separate consideration. We shall first describe the variety known as *tussis titillans*, or *catarrhus siccus* of Lænnic.

Symptoms.—This disease, in its primary form, is characterized at its outset by a spasmodic, titillating cough, caused by a peculiar irritation of some portion of the bronchial mucous membrane. The cough, which occurs in paroxysms, is most apt to set in at night, just as the patient, on retiring, assumes the recumbent position; but it may occur at any time of the day or night. The irritation that seems to provoke the cough, is perhaps most frequently seated in the region where the trachea bifurcates—the throat pit—but it may be experienced in the fauces, the larynx, the trachea, or in any portion of the respiratory passages. When the irritation is confined to the fauces and larynx, the sensation is one of roughness or formication, as if caused by the inhalation of some irrespirable vapor, such as chlorine gas; if seated in the sternal region, it gives rise to a sensation of oppression and dyspnœa, not unlike that of asthma; still lower, in the epigastrium, the irritation may provoke contractions of the diaphragm, and even cause nausea and vomiting.

In the first stage it is always dry, tormenting and irrepressible; and if the irritation is seated in the vicinity of the larynx, the reflex action may excite spasm of the glottis; this, when it occurs, is accompanied with extreme dyspnœa, the face becoming flushed, and the inspirations labored, panting, and more or less stridulous.

The cough occurs in paroxysms of longer or shorter duration, according to the violence of the attack. The lighter grades are gen-

erally quickly subdued; but when violent, or spasm of the glottis supervenes, the paroxysm may last for hours, and greatly exhaust the patient. After it has existed for some time, a small amount of very adhesive mucus is secreted, the expectoration of which, in the form of detached lumps or pellets mixed with phlegm, brings temporary relief. This *sputum margaritaceum*, as the characteristic expectoration is called, consists of small masses of pearl-gray mucus, which, by adhering to the lining membrane of the bronchia, frequently stop up the ramifying branches, and thus shut off the respiratory function and murmur from the portions of lung to which they are respectively distributed. These obstructions, however, are never so numerous or extensive as to diminish the general resonance of the chest, percussion eliciting a clear sound from every part.

This primary form of the affection generally runs an acute course, the accompanying fever being sometimes so violent as to excite apprehensions of the setting in of lobular pneumonia; but the intermittent character of the cough, and the concurrent diminution of the fever, with diurnal intervals of exemption, soon establish its true nature.

The secondary form may be either acute or chronic, according as it supervenes during the course of acute catarrhal diseases, such as coryza, measles, acute bronchitis, etc., or according as it becomes complicated with emphysema, chronic bronchial catarrh, tuberculosis, etc. In these cases, while the affection is to some extent masked by the primary disorder, the symptoms of irritation are generally so pronounced as to be easily discerned, and it is not until the glutinous, stringy, grayish mucous secretion is replaced by catarrhal or tuberculous expectoration, that they are liable to be overlooked. Even then the titillation continues to recur in particular parts of the respiratory passages, and is a source of great annoyance to the patient.

The chronic form involves chiefly the smallest divisions of the air-passages, the lining membrane of which is swollen and covered with a gluey secretion, which can only be expelled by severe paroxysms of coughing, similar to those above described. The frequent repetition of these coughing fits results, sooner or later, in rupture and dilatation of the pulmonary vesicles. Hence we find almost every case of long-standing, complicated with pulmonary emphysema, and with more or less permanent dyspnœa; the face

also becomes permanently congested, the ears, cheeks and nostrils presenting a characteristic bluish appearance, in consequence of the capillary venous engorgement resulting from the prolonged fits of coughing.

Etiology.—Kafka regards the simple form of this affection as a neurosis, caused by irritants that affect the principal nerves of the bronchial mucous membrane; such as the inhalation of cold or damp air, exposure to intense cold, sudden changes of temperature, cold winds, draughts of air, acrid gases or vapors, smoke, dust, too long or too loud talking, especially during a walk or run; screaming, singing, shouting, loud reading, especially if mixed up with a good deal of talking; exertions of the wind-pipe by the use of wind instruments, whistling, etc.; adding, that it may also be excited by fits of passion, chagrin, sudden fright or surprise, etc.; and sympathetically in hypochondriacs, hysteric women, children during the period of dentition, girls during the menstrual flow, etc.

What is called the secondary form of catarrhus siccus, often supervenes during coryza, measles, influenza, acute or chronic bronchial catarrh, emphysema, and tuberculosis; but whether as cause or effect is not always clear. Most authors, however, regard the titillating cough as secondary in these cases to the bronchial or pulmonary disease with which it is associated, even when it is the earliest and most prominent symptom in the case.

Treatment.—Whether we regard the cough as the most essential element in the case or not, it is of such a tormenting character, and gives rise to such serious consequences, that there can be no doubt as to the propriety of subduing it as soon as possible; our first and principal aim, therefore, should be to mitigate the paroxysms and prevent their return. To effect this, we should take into consideration the exciting causes, the seat of the irritation, the general and concomitant symptoms, particularly those of the respiratory organs, and, as in other cases, the conditions that tend to aggravate or ameliorate the attacks, or have any modifying influence upon them.

Of these, the most important, because the most influential, are the exciting causes. Hence the patient should be very careful to avoid exposure to sudden changes of temperature, and especially those of a lower degree, the inhalation of irritating substances, either in the form of vapor or dust, the undue exertion of the respiratory

organs, and every form of mental excitement. Even the temperature of the patients room should be carefully regulated, and kept as near the temperate, or rather, the *comfortable* point as possible both day and night.

Therapeutic Indications.—*Aconite.*—High fever, attended with dryness of the throat; constant titillation in the fauces and larynx; dry, harrassing cough, occurring in paroxysms, especially at night, and aggravated by excessive warmth of the room, by talking, or by drinking; also when complicated by coryza, measles, or acute bronchitis.

Ammonium carb.—Titillation in the larynx and trachea, and attended with dyspnœa; dry and paroxysmal cough, occurring chiefly at night; cough provoked by violent contractions of the diaphragm. The cough is aggravated by the open air and by talking. This remedy is best adapted to cases complicated with coryza, influenza, and bronchial catarrh.

Acidum benz.—Stinging sensation under the sternum, accompanied by a titillating cough, caused by a cold, and aggravated by deep inspiration; breathing asthmatic, and attended with catarrhal symptoms.

Arsenicum.—Expectoration difficult and scanty, consisting of tenacious mucus; cough dry, short and fatiguing, worse at night and on lying down, caused by irritation or titillation in the trachea, and attended with asthmatic or suffocative fits. Suitable to both acute and chronic cases, especially when attended with great debility.

Belladonna.—Titillation in the fauces and upper portion of the air-passages, with dryness of the throat, provoking an irritative, paroxysmal cough; spasm of the glottis, or great dyspnœa, with flushed face; sensitiveness to light and noise: dry cough day and night from titillation in the larynx or trachea; aggravation of the symptoms at night, or on lying down, talking, drinking, or crying. The remedy is indicated whether fever is present or not; also whether primary or secondary, simple or complicated.

Chamomilla.—Dry catarrh of children, especially when teething; this remedy is also suitable if the characteristic cough is complicated with catarrhal symptoms, and accompanied with coarse râles, rattling of mucus in the bronchia, intestinal catarrh, etc.; also

in cases of a purely nervous character, such as occur in sensitive women and girls, especially during the menstrual period.

Conium.—Dry, paroxysmal, irritating coughs, of such violence as to cause vomiting; cough worse at night and in rough weather; spasmodic cough, accompanied with contractions of the chest and diaphragm, with shortness of breath and flushed face; symptoms aggravated by lying down, by deep inspirations, and by the use of acids or salt food. Conium is specially adapted to cases complicated with acute bronchitis, measles, influenza, etc.

Graphites.—Chronic cases, attended with titillation of the larynx, nightly paroxysms of cough, catarrhal roughness and hoarseness of the air-passages, and dyspnœa. This remedy is particularly suited to women at the menstrual period; also to cases complicated bronchial catarrh, scrofulous eczema, and asthma.

Hyoscyamus.—Nocturnal cough, of a spasmodic character, excited by lying down, and relieved as soon as the erect position is resumed.

Ipecacuanha.—Typical cases of titillating cough, attended with nausea or vomiting; cough excited by a deep inspiration, by cold air, or by lying down. Especially suited to catarrhal cases, with rattling of mucus in the bronchia.

Ignatia.—Nervous, titillating cough, caused by irritation in any portion of the air-passages, or by depression of spirits; cough worse after eating, drinking coffee, or in the open air. This remedy is adapted to both primary and secondary cases, and is especially suited to nervous women and children.

Kali carb.—Dry, titillating cough, attended with violent headache, choking, pains in the larynx and chest, with or without catarrhal symptoms; nightly exacerbations, followed by exhaustion.

Mercurius.—Catarrhal cases, especially when complicated with diarrhœa, or attended with copious perspirations which fail to relieve. This remedy is particularly suited to teething children, especially after Chamomilla.

Natrum mur.—Spasmodic, titillating cough, attended with dyspnœa or vomiting, especially when caused by active exercise, or by mortified feelings. This remedy is adapted to catarrhal cases, both acute and chronic, especially when complicated with coryza, nasal catarrh, emphysema, or tuberculosis.

Nux vom.—At the outset of typical cases, especially those of a catarrhal nature, and attended with constipation, irritable mood, etc.

Opium.—Spasmodic, paroxysmal, titillating cough, occurring chiefly at night, and attended with but a scanty expectoration; irritation of the larynx, causing cough, with oppression of the chest.

Rhus tox.—Cough excited by tickling and dryness in the throat, accompanied by coryza, and rheumatic pains in the limbs, especially when caused by exposure to cold or damp; racking, paroxysmal cough, with pain in the head.

Rumex.—Titillation in the trachea, with soreness; dry catarrh, with great irritability of the laryngo-tracheal mucous membrane; violent, incessant, fatiguing cough, with little or no expectoration, worse at night or on lying down; aggravated also by pressure, talking, and by inspiration of cold air.

Senega.—Titillating cough, excited by irritation in the larynx, and attended by roughness in the throat, frequent sneezing, and oppression of the chest; aggravated by cool air, and by exercise, especially going up stairs. This remedy is best suited to acute attacks, or when complicated by influenza.

Zincum met.—Dry titillating cough, with stitches in the chest and oppressed breathing; the irritation is seated in the trachea, producing a violent spasmodic and exhausting cough; attacks the patient at night, depriving him of sleep; respiration asthmatic. Especially suited to the cough when it occurs in hysteric women, particularly during the menses.

Clinical Observations.—Kafka says: "We have seen a very violent, acute titillating cough cured very speedily by means of a decoction of *Senega;* the patient was a lady, and had contracted the cough during an ascension of the Riga. This remedy is appropriate for cough, if the titillation is seated in the larynx, and this is attended with roughness in the throat and oppression on the chest; if the cough is made worse by the breathing of fresh air, and if the patient has to sneeze frequently and continually until the head feels heavy and giddy, without any coryza being present. It may be used during an attack of influenza and acute bronchial catarrh.

Meyhoffer says of *Kali iodidum:* "Dry irritating cough with scanty and rather frothy thin mucous expectoration, or none at all,

obstinate tickling and irritation in the windpipe, prolonged expiration with sensation of tightness of the chest, and shortness of breath, are the leading symptoms for the selection of this medicine."

Of the bichromate he says: "We are not cognizant of a remedy more efficacious than *Kali bichr.* in obstinate cases of chronic bronchitis, either attended by violent fits of coughing, splitting headache, and muscular weakness, or by that wearisome morning cough which ceases only after the expectoration of a gluey phlegm. Inhalations of this salt (a quarter of a grain to the ounce of water) contribute much to accelerate recovery. Bichromate as well as the Iodide of Potassium is also frequently adapted where a scrofulous taint is combined with rheumatic affections of the fibrous tissues and the periosteum."

This author also reports the following case: "Madame de la T—, æt. 56, with scrofulous scars on her throat, living habitually in the north of France, had been suffering for the last eight years from violent cough in winter, which only partially disappeared even during summer. Her general health beginning to fail, she came to Nice for the winter 1861–62; on her arrival she complained of a very fatiguing dry cough, which gave her no rest night or day, as well as of chronic coryza with constant blowing of the nose, and serous discharge alternating with impossibility of breathing through the nostrils. She suffered moreover from pain in the upper part of the right side of the chest, and below the sternum; a full breath increased the pain in the chest. The patient looked pale, and her bluish lips betrayed insufficiency of aeration; walking or going up stairs caused great shortness of breath; she had grown much thinner and weaker within the last six months, and had entirely lost her appetite. On examination the lining of the nose was found of a dingy purplish color, puffed and swollen, the rim of the nares excoriated and crusted, the pharynx rugged, with swollen follicles and bluish-red aspect. The respiratory noise was rough on both sides, expiration prolonged in the apex of the right lung, with diminished vesicular murmur; disseminated sibilant rhonchi were heard on both sides of the chest.

"Besides the bronchitis there was evidently a slight congestion in the apex of the lung. Bryonia 3 was exhibited; it relieved the pain in the chest, the prolonged expiration in the right lung subsid-

ed, the vesicular murmur returned, and within a few days the cough at night had altogether ceased. Iodide of Potassium succeeded the above remedy, and was continued with intermission of eight or ten days every fortnight for nearly three months. She left Nice in the month of April totally free from cough and coryza, having also gained flesh and being able to take long walks without experiencing any difficulty of breathing. In November, 1864, she again visited this winter station, accompanied by a daughter who was affected with incipient tuberculosis of the lungs. She then told me she had since her former visit to Nice taken several colds, which had readily yielded in a few days to homœopathic treatment." This case happily illustrates the correctness of the preliminary remarks above made under the head of *Treatment* (q. v.)

4.—BRONCHIAL INFLAMMATION WITH COPIOUS SERO-MUCOUS SECRETION.

BRONCHITIS SEROSA; PITUITOUS CATARRH OF LAENNEC.

This variety of bronchitis may be either primary or secondary, acute or chronic. It is characterized by severe paroxysms of cough, which are attended with dyspnœa, and by the expectoration of a thin glairy liquid, consisting of a copious, transparent, viscid, and stringy sero-mucous secretion from the bronchial membrane.

Symptoms.—In its acute form it sometimes bears considerable resemblance to a simple catarrh, or cold, but with this difference, that while the febrile symptoms are generally so slight as to be scarcely perceptible, the dyspnœa and sense of oppression are often extreme. The cough and dyspnœa occur in paroxysms, which are relieved after a time by the expectoration of a serous fluid, often amounting to several pints, the surface of which is covered with froth and mucus. The attacks generally last but a few hours, passing off entirely after the bronchial secretion is discharged. Two or more paroxysms frequently occur on the same day, the intervals between them being generally free from any distressing symptom. Sometimes the disease appears to be associated with the so-called "dry catarrh" of

Laennec (q. v.), the characteristic expectoration of which is then found in the sputa.

Physical Signs.—Resonance clear on percussion. During the paroxysm the sound of respiration is diminished; but a variety of sibilant and mucous râles are heard, some of which bear a considerable resemblance to the chirping of birds. In the intervals between the paroxysms, the respiratory murmur is louder and more natural, but the râles, though present, are less distinct.

Anatomical Appearances.—These are chiefly of a negative character, little or no trace of inflammation of the bronchial mucous membrane being discoverable after death. The membrane is often quite pale, and although it is sometimes a little thickened and softer than natural, this is probably due to the infiltration of serum. Occasionally the membrane is slightly reddened, but usually the evidences of inflammatory action are but trifling; emphysema and œdema, on the contrary, are rarely absent.

Pathology, Etiology, Etc.—The appearances above noted, taken in connection with the fact that the disease usually attacks persons of an enfeebled constitution, has led many to regard it as an occasional sequela of debility, arising especially from atony of the capillary vessels of the bronchial membrane, and not from inflammation of its substance. This view is apparently confirmed by its frequent association with dyspepsia, and especially with the uric acid diathesis. But it is a question whether these conditions, when present, are not effects rather than causes. It could not reasonably be expected that any patient would be able to bear the loss of an abnormal secretion, amounting to several pounds per day, for a long period of time, without its impairing the nutritive functions, and even undermining the system generally. Accordingly, in the majority of instances, dyspepsia and emaciation sooner or later supervene, and sometimes prove fatal from exhaustion. But in many cases, other complications still more serious ensue, such as emphysema, dilatation of the heart, pulmonary œdema, enlargement of the liver, renal difficulties, tuberculosis, etc.

Treatment.—The successful treatment of this variety of bronchitis, especially when complicated, requires that each case be carefully individualized, the complications receiving special attention. Even in idiopathic cases, the bronchial affection should, for therapeu-

tic purposes, be treated only as secondary to the general condition, since it is not until every vital function is properly performed that we can hope to correct the abnormal secretion, the effects of which are, in the long run, so injurious to the constitution. Instead, therefore, of first searching for specifics for the local affection, the practitioner should pay special attention to the concomitant symptoms, the removal of which often does more towards effecting a cure of the primary disease, than any amount of direct treatment. This will demand in one case remedies for anæmia, in another for dyspepsia, in a third for renal or hepatic congestion, in a fourth for nervous debility, in a fifth for cardiac hypertrophy, in a sixth for pulmonary œdema, and so on.

So far as the excessive bronchial secretion is concerned, we have found nothing to surpass *Antimonium tart.* and *Hepar sulph.*, especially the latter. In several instances we have derived marked benefit from three or four doses of the sixth trituration of Tartar emet., given at regular intervals during the day, with a dose of Hepar sulph. in the morning. We are aware that this is contrary to the experience of others, but we have been successful in too many of these cases to doubt its efficiency. We have found it necessary, however, in most cases, to alternate the two remedies in the manner stated, and to continue their use for a considerable period of time. Where these remedies have failed, we have generally obtained the best results from *Calcarea carb.* and *Silicea*, particularly the latter.

Clinical Observations.—Meyhoffer, who supplies us with such valuable clinical illustrations, reports the following case:—"The Rev. F——, laboring for the last five or six years under bronchial catarrh and asthma, came under my care on April 10th, 1866; he was much emaciated, and although not above forty-seven years old, looked nearer sixty, his hair and beard of a light grey. The skin was thin, pale and clammy. The breathing was short, forty inspirations per minute, to a hundred pulsations. Auscultations revealed an extensive catarrh on both sides of the chest; sonorous rhonchi and moist rattles prevailed over the whole respiratory surface. The breath was very offensive. The left lobe of the liver was found considerably enlarged. The tongue was coated, the appetite gone, and constipation alternated with diarrhœa. The evacuations, when formed or hard, were often mixed or streaked

with blood. The patient was much troubled by cough during the day, but especially at night he was distressed by long fits of coughing and asthma (dyspnœa), relieved only towards two o'clock in the morning by the abundant expectoration of a gluey, semi-transparent sero-mucous fluid. From two till five he enjoyed comparative rest in a sitting posture, after which hour another similar attack came on, which lasted till about half-past eight or nine. This state had lasted about a fortnight, and had been preceded by pain and swelling in the articulations of the fingers; some of the middle joints of these were still enlarged, hard and tender to pressure. He related that long before the cough came on he had been subject to dyspepsia, severe neuralgic headaches, and what he called rheumatic pains all over the body. With the appearance of the bronchial affection the digestive organs began to act better; but, on the other hand, he was never quite free from pain, in some part or other, as long as the respiratory function was not suffering. From the moment, however, an irritation of the air tubes began to prevail, all the morbid phenomena of the sensitive sphere disappeared. A deposit of brick-colored sand in the urine was almost constant, especially in the morning. Gout was hereditary in his family.

"*Aconitum* 2, one drop every hour, brought rapid relief; already the first night was much less disturbed by coughing and dyspnœa which the second night continued to improve; while in the meantime the pulse came down to eighty. It was then succeeded by *Bryonia* 3, under the action of which the respiratory and gastric morbid phenomena steadily retrograded. The beginning of May then being at hand, and the patient longing for a change of air and scene, I advised him to go to Vevey, and thence, early in June, to proceed to Kissinger. At this place he drank very moderately of the Ragoczy, bathed in Pandur water, and inhaled saline vapors. This gentleman returned in November of the same year; nutrition had so much improved that, at first sight, I did not recognize him. During the whole season (1866–67) he only had two very slight attacks of bronchial catarrh, and enjoyed in other respects much better health than for many years past."

The same author says, "I think it hardly possible to overcome radically the catarrh pituiteux of Laénnec without the intervention of Silicea. In this form of bronchial disease no other agent contributes so largely towards recovery."

5.—BRONCHIAL INFLAMMATION WITH COPIOUS MUCO-PURULENT SECRETION.

BRONCHORRHŒA; INVETERATE CATARRH.

In our general description of chronic bronchitis (q. v.), we have stated that, as a general rule, the disease is unaccompanied by fever, and that the cough, though more or less troublesome, is loose, the expectoration being somewhat copious, and consisting either of whitish or grayish mucus, or else of a yellowish, greenish or dirty brown matter, of a purulent or muco-purulent character. Now the nature of the expectoration depends, to a considerable extent, upon the anatomical, as well as the pathological, condition of the bronchial tubes. When bronchitis has existed for a number of years, especially in a severe form, it almost always produces certain lesions of the bronchial and pulmonary tissues, namely, dilatation (*bronchiectasia*) and emphysema. The former consists of cylindrical, ovoidal, or globular enlargements of the bronchial tubes, the first two of which occur in the course of the bronchial ramifications, and reach the diameter of a goose-quill, or even a finger; but the globular are confined to the terminations of the smaller branches, and vary in size from a cherry stone to a walnut. Where the dilatations are numerous and extensive, the intervening pulmonary tissue is compressed, and as a consequence there is more or less dyspnœa, or shortness of breathing. The dilatations are supposed to be the result, in most cases, of long-continued and severe coughing spells, at a time when the bronchia are enfeebled by disease, and loaded with large quantities of viscid mucus.

Symptoms.—These depend chiefly upon the morbid alterations just noticed. In addition to cough and expectoration, the suppurative process gives rise to anæmia and emaciation, whilst the retention of septic matter in the sacculated bronchial tubes irritates the system, impairs the appetite, renders the sleep restless and unrefreshing, excites fever, and promotes exhaustion. As a consequence, there is a gradual loss of strength, the limbs become heavy, the extremities swell, night sweats set in, and sooner or later the patient succumbs to the combined effect of exhaustion and suffocation.

Physical Signs.—Vocal and respiratory fremitus unusually strong; also increased resonance of the voice and breathing. Fine and coarse mucous râles are heard wherever there is an accumulation of mucus; and where large globular dilatations exist, cavernous respiration and gurgling may be heard, as well as a corresponding degree of bronchophany or pectoriloqy—signs likely to mislead the practitioner as apparent evidences of tuberculous infiltration and vomicæ, unless the general symptoms, which are usually different, receive special attention.

Treatment.—The appropriate treatment has already been given under the head of *Chronic Bronchitis* (q. v.) Particular attention should be given to the remedies enumerated under the head of *Scrofulous Bronchitis* (q. v.), and to the accompanying therapeutic indications.

Clinical Observations.—The following clinical remarks of Meyhoffer furnish a valuable repertory of remedies for this class of cases: "We have experienced the efficacy of the *Bromide of Potassium* in that form of bronchial catarrh which is characterized by almost total absence of cough, with great hyper-secretion of mucopurulent matter and dyspnœa caused by muscular exertion. The diminished or suspended reflex motor action of the bronchial nerves belongs especially to the pathogenesis of this remedy, and unless the larynx be involved in the morbid process, this salt will rarely bring relief where there is much irritation and cough. *Kali iod.* and *bich.* are often the natural successors of the bromides, when under the influence of the latter the capillaries and tissues which line the air-tubes have acquired more vitality, and show symptoms of irritation. Iodides will be preferable when the air-passages have experienced material alterations—dilatation, thickening of the lining—or when a more intense action on the general nutrition is required.

"*Ammonium carb.*, and its other salts, as *chloride*, *iodide*, and *phosphate*, we have found of great use in very chronic cases of copious bronchial secretion, great difficulty of expectoration, and bronchial dilatation. Low vitality, atony of the bronchial surface, are leading indications for their exhibition. The hand and the ear will detect numerous coarse rattles, and yet the patient experiences no necessity to clear his chest of its morbid productions. Cachetic conditions and old age furnish the most frequent instances for the inter-

nal as well as external application of these salts. The second and third dilutions act unexceptionably.

"We use the Carbonate of Ammonia in the ordinary run of cases. The *Hydrochlorate* for *inhalations*; one grain to an ounce of water proves a highly effective preparation. Sixty to a hundred inhalations a day suffice to diminish, within a short space, muco-purulent secretion. At the outset frequent cough interrupts the inhalatory proceeding, which soon, however, gives way, and the patients begin to feel freedom and ease about the region of the chest.

"*Calcarea carb.* and its divers derivatives.—The physiological importance and curative action of Calcarea in deficiencies of secondary assimilation, especially in children, as well as in scrofulous diseases, have already been the subject of numerous remarks. This substance seems, however, not to be appreciated according to its deserts in concrete cases of chronic bronchial catarrh. We fully agree with Baehr, who indicates "emphysematous catarrh" as being especially within the sphere of its action. No less commendable is this mineral in bronchial dilatation and putrid expectoration. Its middle and higher dilutions operate favorable modification in great irritation in the air-tubes; dry, tormenting cough, chiefly at night, raising only after long and great efforts scanty, white, frothy, gluey, or dirty-looking putrid sputa.

"*Carbo veg.* is the panacea for poor exhausted constitutions and aged people with great torpor of the bronchial lining, profuse muco-purulent sputa, or deficient power of expectoration, with symptoms of imperfect oxidation of the blood, lips and nails blue, extremities cold, etc. The weaker the invalid the better the higher dilutions work.

"Inhalations and the internal use of *Kali bichr.* form our standard course of treatment in those numerous cases of common bronchitis vacillating between the acute and the torpid inveterate character of the disease. A certain degree of irritation, vascular congestion, and moderate muco-purulent expectoration, marks the morbid state ready to give way to the specific action of the salt. Inhalations, however, do good service in bronchial dilatation with fœtid breath and expectoration. The sputa soon undergo a favorable change of aspect, while they lose at the same time their offensive odor and diminish in quantity.

"*Kali brom.* has contributed to the improvement of some cases of torpid bronchitis with copious purulent expectoration; the second and third dilutions have been employed, but we attribute the favorable result rather to the inhalations of the salt, one and two grains to four ounces of water, as without these the progress was much slower.

"*Kali permang.*—We use this salt for inhalations in long standing inveterate cases of putrid bronchitis. It stimulates the altered surface of the air-tubes to a more healthy function; the tissues exhibit more tone and vitality, cough and expectoration diminish, the latter grows easier, losing its offensive smell. One or two grains of the salt to an ounce of water, and fifty to a hundred inhalations daily have proved effectual.

"A long time was necessary to conquer my repugnance to the use of *Lycopodium*, excited by the exaggerated laudations of its medicinal virtues which I had been condemned to listen to; now I have, on the contrary, to guard against falling into the same error myself. The fact is, that since I learned to appreciate its efficacy in chronic pneumonia, I have not failed to observe, also, its vitalizing influence in those forms of bronchitis characterized by copious muco-serous or muco-purulent secretion.

"These morbid phenomena being habitually the result of more or less serious alterations, it follows that Lycopodium acts favorably in emphysema, dilatation of the air tubes, and senile catarrh. Constant tickling cough, worse at night, numerous loud mucous rattles, with rare and scanty sputa, are symptoms lying especially within the range of its action. But the varieties of bronchitis above mentioned are often attended or complicated by the phenomena of abdominal vascular obstruction and atony of the alimentary canal, or by those of the acid diathesis. The signs which arise in such circumstances, as congestion of the liver, flatulency, obstinate constipation, cachectic complexion, red gravel, and acid dyspepsia, are all within the range of Lycopodium. Low dilutions of it are not ineffectual, but higher ones work better.

"*Senega* has no small merit when in copious accumulation of mucus in the air-tubes the latter causes, by its adhesiveness to all the organs through which its passage lies, the greatest, often the most ineffectual efforts of coughing and hawking for its expulsion. First and second dilutions act better than higher ones.

"*Sulphur* reveals its curative powers in the most inveterate forms of bronchitis; it acts best, however, when the morbid process is distinguished by arterial and venous vascular irritability, by great impressionability of the skin, which suffers from the slightest atmospheric variation, and by exacerbation of the pectoral symptoms. The rheumatic, gouty, more especially the herpetic and scrofulous diathesis, fall equally under its sway. With the reservation of these premises this mineral corresponds to the most varied forms of bronchitis, from the simple catarrh, with scanty, yellowish white sputa, to bronchorrhœa, dilatation of the air-tubes, and putrid expectoration. These, with all their intervening and transitory phases, may be benefited by sulphur. As a rule the higher dilutions act better, but in dilatation of the air-tubes and putrid sputa the second and third triturations have done us good service."

We can bear testimony to the great efficiency of the *Benzoate of Soda* in inveterate catarrh, especially when complicated with tuberculosis. We recently had a case of this kind under our care which for three years had resisted all other treatment, but which yielded in a few weeks when subjected to daily inhalation of this remedy, assisted by suitable constitutional treatment.

6.—PSEUDO-MEMBRANOUS INFLAMMATION OF THE BRONCHIA.

BRONCHITIS CROUPOSA; PLASTIC BRONCHITIS.

Bronchitis crouposa is characterized by the same diseased state of the affected membrane that exists in laryngo-tracheal croup (q. v.) The croupous matter is deposited upon the surface of the bronchial mucous membrane, forming in the larger bronchia membranous tubes, and in the smaller ones solid cylinders. (*Rokitansky, Oppolizer.*) The membrane usually begins to form in the smaller or medium sized branches, and extends upwards into the larger tubes in proportion to the acuteness of the attack. It is generally limited to a circumscribed portion of the bronchial tubes; only exceptionally does it extend throughout all the bronchial ramifications of the lung.

In the earlier stages, or when first secreted, the croupous exuda-

tion consists chiefly of an albuminous substance, or rather of an albumino-fibrous matter in which albumen predominates; it is then softer and less compact than when fully organized, or where fibrin constitutes the principal portion of the exudation. In the latter state it is firm, tough, and elastic, similar in every respect to the analogous membrane of true croup. The false membrane varies in thickness according to age and the size of the tubes, being sometimes but a mere pellicle, at others having a thickness of nearly a line. According to Rokitansky, the tubular exudations from the larger bronchi present a calibre inversely proportional to their thickness, and those thrown off from the finer ramifications occur as solid cylinders. The color of the membrane varies from a pure white to a yellowish white, grey, or even greenish tint, according to the stage of the disease, the age of the patient, and the particular part affected. When freshly exuded the croupous membrane is generally closely attached to the subjacent mucous membrane, but at a later stage it is less adherent. The exudation is said to occur more frequently in the bronchia of the inferior lobes, than in those of the middle and superior lobes, the medium sized branches being the parts first affected.

Bronchitis crouposa may be either primary or secondary, acute or chronic. Most frequently it is a secondary affection, resulting from, and complicated by, pseudo-membranous inflammation of the larynx and trachea. Nearly every case of primary bronchial croup in the adult, is chronic, while in children, on the other hand, it is acute. The primary form is also a very rare disease; nevertheless, several acute cases have been observed even in the adult. In most cases, however, as above stated, bronchial croup in the adult is a chronic affection; and although it is apt to spread more or less upward, it shows very little tendency to attack the trachea and larynx.

Symptoms.—The symptoms of bronchial croup, whether acute or chronic, are similar to those of common catarrhal bronchitis, attended with unusually severe paroxysms of dyspnœa. When acute, in addition to the extreme dyspnœa caused by the mechanical obstruction to respiration, there is high fever accompanied with chills. The fever is of a remittent character, the pulse generally ranging from 80—100 in the morning up to 120—160 in the evening. In these cases, where large portions of the bronchia are involved, the blood is insufficiently aerated, and as a consequence, the surface, especially

that of the lips and cheeks, is more or less cyanotic. For the same reason, the extremities are often blue and cold, especially in the morning, and the capillary circulation is always feeble. Severe paroxysms of cough occur, attended with fits of suffocation. The cough is generally hoarse and muffled, and is accompanied by little or no expectoration. When expectoration does occur, the sputa is thick and glutinous, with minute fragments of false membrane, or whitish or blood-tinted masses, which when separated in water show branching of coagula, the coats of the affected bronchial ramifications. Immediately after the membranous expectoration takes place, the dyspnœa and cough perceptibly lessen; the remission, however, is soon followed by a marked aggravation of the symptoms; spasmodic expulsions, followed by short, labored inspirations, occur; the face and neck become bloated; the eyes protrude from their sockets; the forehead is covered with beads of sweat; the vessels of the neck visibly pulsate, and the paroxysms increase in intensity, until expectoration of membranous matter again occurs,which, as before, is followed by more or less relief, and so on, until the case terminates either in recovery, or, as is generally the case, in collapse and death. In the case of children, whose powers of resistance are less than those of adults, and in whom the disease, besides being in the acute form, is much the most common, a fatal result is soon reached. The blood, rendered highly venous by being deprived of its usual amount of oxygen, produces a very depressing effect upon the brain and dependent functions. The face becomes pale, or livid and purple, the skin covered with cold perspiration, the pulse frequent and feeble, and a state of great depression, restlessness and anxiety ensues. Finally, the powers of life begin to fail, the extremities become cold and clammy, delirium or coma supervenes, and death, with or without convulsions, ends the scene.

The symptoms in chronic cases are, for the most part, similar to those of the acute, the chief difference being, that,while there is little or no fever, the paroxysms are generally more violent, in consequence of the exudation being secreted in the smaller instead of the larger tubes. During the paroxysms there is a continuous painful cough, which is interrupted from time to time by the expectoration of conglomerated masses of branching coagula, which are found to be perfect casts of the bronchial ramifications. Pulmonary hemorrhage is a frequent complication. Biermer observed hæmoptœ to

either precede or accompany the expectoration of the casts in one-third of his cases. The expectoration of the false membrane generally continues one or more days, according to its severity, when, with the exception of the bronchial catarrh that remains, the patient often feels as well as usual. After some days, weeks, or months, as the case may be, the paroxysms recur, sometimes exhibiting a sort of periodicity in their appearance, especially where they are vicarious, or set in during the menstrual period. (*Oppolizer.*) The disease in its chronic form is nearly always complicated with tuberculosis, and is therefore generally fatal.

Physical Signs.—In most cases there is very little dullness on percussion, especially in the first stage; the respiratory murmur is generally weak, and is frequently covered by large and small mucous râles. At first there may be no abnormal dullness; perhaps only a little dry rattling. As expectoration sets in the catarrhal rattling increases, inspiration and expiration become more and more rough, the mucous râles become larger and more moist, until finally the rattling covers the whole lung. In some acute cases the sibilant râles are quite prominent, especially in children; and where the finer tubes are involved the bronchial sound is something decidedly hissing; but after the mucous secretion becomes established the sibilant gives place to mucous râles, which are at first dry and scanty, then fine and moist, afterwards coarse and rattling, and finally large and tracheal. In some cases, the fine and moist râles, instead of becoming coarser, change to the crepitant and subcrepitant, indicating the setting in of pulmonary œdema, pneumonia, or capillary bronchitis. In the early stages the resonance on percussion is nearly normal, but as the disease advances the resonance gradually diminishes until, in the advanced stages, the sound on percussion becomes in most cases very dull.

Diagnosis.—The diseases with which croupous bronchitis is likely to be confounded, are capillary bronchitis, and asthma complicated with bronchial catarrh. From the former it may be distinguished by the greater dyspnœa, the muffled and suppressed cough, the characteristic expectoration, and the physical signs. Asthma is attended by dyspnœa only during the paroxysm, unless the mucous secretion is very profuse, which is never the case in bronchial croup.

Etiology.—The predisposing causes of this disease are en-

tirely unknown. Biermer thinks that in women menstrual difficulties and gestation predispose to the malady. Others think that the scrofulous and rachitic diatheses act as predisposing causes. Age appears to have something to do with its occurrence, as we find it more frequent during youth and adolescence than during middle life or old age. The disease rarely affects infants, and it never appears in a chronic form in children. Males are said to be more liable to it than females. The chief exciting causes are probably the same that give rise to catarrhal bronchitis. Most cases appear when catarrhal diseases are prevalent, and all seem to have a catarrhal origin. Accordingly, we find it most likely to appear in low, swampy situations, or when the weather is cold and damp. Dr. Kretschy is of the opinion that, as an independent exudative morbid process, it is probably caused by an outside, specific agent, but of this there is little proof. In fact we no more know why the catarrhal process ends in pseudo-membranous effusion, than we know why it localizes itself upon particular portions of the respiratory apparatus.

Treatment.—The leading remedies that have been recommended for this disease are *Bromine*, *Kali bichromicum* and *iodatum* and *Sanguinaria canadensis*. Oppolizer, a very high authority, recommends the iodide of potash in the chronic disease, and in the acute one the same remedy with inhalations of hot water. I have found inhalations of the bichromate and iodide of potash, and of weak solutions of bromine, to be more effectual in these cases than any internal medication. Others, however, have obtained the best results from the internal administration of Kali bichr. alone.

Clinical Observations.—Dr. Thomas Nichol reports the following successful case: "On the evening of March 27th, of the current year, I was called to see P———, a little girl of almost four years, who had been subject to bronchial affections since birth. I found her lying on her mother's lap, the countenance pale and livid, the lips very cold, the dyspnœa extreme, while the cough was muffled as if the head had been enveloped in a blanket. No expectoration whatever, and the sibilant râles were remarkably shrill. The hands and feet were quite cold, and the half-delirium told of carbonic acid-charged blood circulating in the brain. Sanguinaria prepared in the form of an acetous syrup was administered every ten minutes, and within two hours improvement had set in. The

breathing became easier, the cough clearer and less husky, a tough tenacious mucus was expectorated, and with the return of a freer pulmonary circulation, warmth returned to the extremities of the body. At the same time the hissing diminished and mucous râles—at first faint and afterwards more pronounced—made their appearance. In eighteen hours the little sufferer was out of danger, and in four days she was dismissed." In this case there was no ocular evidence that the false membrane had ever formed, and hence some will doubt its having been a case of true croupous bronchitis; but a little reflection will show that it was a clear case of this disease, happily arrested in the first stage.

The following case by Dr. Franz Kretschy is instructive in a pathological point of view, and we think of sufficient interest to be given at length: "F. L———, 23 years old, was suddenly attacked in the afternoon of April 7th, 1872, with a *severe chill*, chattering of teeth, general lassitude, so that he had to take a carriage to reach home. The chill lasted for one hour and a half, followed by heat and a severe *laborious* cough, with painful dyspnœa during the whole night, thirst, headache, sleeplessness. At 6 A. M. suddenly a sensation of suffocation, profuse sweat, *expectoration of a reddish colored lump*, having the appearance of a piece of flesh. Immediately afterwards the breathing became more free, the cough light and dry, moderate heat, but great lassitude, headache, so that he had to keep the bed. During the day irritation to cough.

April 9th, 9 A. M. Enters the hospital. Patient is of a strong build, pale color, tongue pale, moist, as also the fauces; no catarrhal affection nor hoarseness. Thorax well arched, in the right axillary region a painless doughy tumor of the size of an apple and covered with sound skin, which gradually formed itself for the last six weeks; trifling catarrhal expectoration. Both sides of the thorax respire alike and quietly; sometimes tussiculation. On the right side posteriorly scanty dry rattling; nowhere abnormal dullness, nowhere consonance. He only complains about lassitude. At 10½ A. M., suddenly a fit of suffocation, severe paroxysms of cough, cyanosis, sweat, (linen had to be changed), till he again expectorated another reddish lump, forming in water a perfect cast of a bronchus; 1½ ctm. thick, 11 ctm. long. Immediately after the attack, right side posteriorly scanty rattling, over the whole other lung indistinct breath-

ing. Slept well during the night, towards morning increased cough, catarrh, slight expectoration.

April 10th, 1 P. M. Severe cough, dyspnœa to suffocation, ceasing after expectoration of a similar cast. During the day expectoration of numerous small bronchial coagula without dyspnœa.

M.	37.6,	C. P.	88,	R.	32.
E.	41.0,		128,		44.

Slept well during the night and feels refreshed in the morning, breathing free.

April 11th. Chill in the afternoon, 2½ to 3, heat from 3-4, for some minutes severe cough, severe dyspnœa followed by expectoration of a large bronchial cast with great relief. Breathing free, no cough, expectoration of small bronchial coagula during the whole day.

M.	37.4,	P.	88	R.	32.
E.	40.4,		120,		36.

April 12. Good night and feels greatly refreshed in the morning. Towards evening great sensation of heat without a chill. Dyspnœa, cough, sputa cruenta with small bronchial coagula. Percussion on the right side posteriorly from the apex to the centre of the scapula somewhat dull, laryngeal inspiration and expiration.

April 13. M. 39.0, 100,34. E. 40.5, 148, 60-72.

Night quiet. Since forenoon great dyspnœa with very little cough. Copious expectoration of small bronchial coagula. He complains of stitches on the left side, especially when coughing and deep breathing. No pain on pressure, respiration superficial, breathes only with the upper part of the thorax, respiration changing between 60-70. In the afternoon collapse, cheeks livid, restlessness, anguish in features, sweat hangs in pearls on forenead, bulbi protruding, restlessly moving about; carotids visibly pulsating, as also the radial pulse, beat of the heart strongly visible, inspiratory drawing in of the 4th left intercostal space. He fights for air. Right posteriorly large vesicular moist rattling, covering the respiratory murmur, left posteriorly consonance with moderately dull sound; copious expectoration of small bronchial coagula.

April 14. M. (7 A. M.,) 38.6. 112, 46. E. 40.2, 128, 52.

Dyspnœa during the whole night, no expectoration, very little cough. *Ether* has a quieting effect on him. A. 7 A. M., severe

coughing spells, cheeks and lips strongly cyanotic, face and neck bloated, jugular veins expiratorily considerably swollen, strong pulsation of the carotids; great anguish, excessive restlessness, spasmodic expiration followed by short inspiration, painful pause, then again spasmodic expiration and thus several times, till with a forced cough the large bronchial coagulum is thrown off. Breathing then again regular, patient feels apparently well again after this exertion, for a short time, but the dyspnœa returns; only the sensation of great oppression and of suffocation is passed. Examination during the suffocatory fit is impossible, after it on the right side posteriorly moderate dullness from the apex to the middle of the scapula and corresponding laryngeal expiration; rattling over the whole lung; left apex rough inspiration and expiration, below hardly audible breathing, dullness, sputa cruenta; small bronchial coagula. Between 1-2 P. M., expectoration of two large bronchial coagula; dyspnœa the whole day. Left, the 3d and 4th, right the 2d intercostal space drawn in during inspiration. In percussing the anterior wall of the thorax muscular jactitation in pectoralis major. Dullness posteriorly low down on left side, laryngeal inspiration and expiration, rattling over whole lung.

April 15th. M. 39.4, 118, 48. E. 40.3, 120, 72.

Less dyspnœa during night, some sleep, little cough; towards morning dyspnœa increases and remains so the whole night. Pulsus dicrotus, weaker during the inspiration, sometimes intermitting; percussion and auscultation the same. Rattling murmur increased tracheal rattling.

April 16th. M. 39.8, 72. E. 40.2, 120, 64.

Dyspnœa, expectoratory motions and expectoration slight; collapsus increases; rattling heard from a distance. Respiratory murmurs covered by large and small vesicular murmurs; hardly any expectoration.

April 17th. M. 40, 140, 60 E. 164, 78.

Great dyspnœa the whole night. No cough, no expectoration, tracheal rattling. Great restlessness, very quick superficial breathing with increasing collapse. In the evening crawling sensation in the right lower extremity, followed by anæsthesia and cyanosis up to the knee. At 6½ P. M., increase of cyanosis, of deep collapse,

sudden loss of consciousness, tracheal breathing, respiration becomes slower and ceases at 7 P. M.; the heart a few minutes later."

The autopsy showed that the case was complicated with tuberculosis. The right lung in its entire surface was full of adhesions by thready pseudo-membranes to the wall or the thorax, with some miliary greyish yellow nodules. The mucous membrane of the trachea and bronchia was strongly injected, reddened, and full of mucus. In the right bronchus, reaching to the middle and lower lobe, was a yellow branching lump, two inches long and one and a half lines in diameter. The left lung in the lower lobe and in the lower part of the upper lobe, and the right lung in its posterior parts, were infiltrated with a bloody gluey mass, nearly totally void of air, and here and there œdemations. The bronchia in the lowest parts of the left lung were infiltrated wsth a thick yellow fluid and with fibrinous masses; the pulmonary parenchyma was also infiltrated by yellow streaks, either following and surrounding the blood vessels, or dragging the connective tissue septa between the lobuli. Kretschy, as before stated, thinks this case clearly proves that the exudative process is dependent on an external specific agent; but whether the tubercular disease was here the exciting or predisposing cause, or whether, in fact, it was anything more than a complication, we think is doubtful.

CHAPTER VI.
NERVOUS AFFECTIONS.

We shall embrace under this head, not only respiratory diseases of a purely nervous character, such as spasm of the glottis, asthma, etc., but also those in which the nervous element predominates, or constitutes an important symptom, such as whooping-cough and hay-fever—diseases which, so far as their pathology is concerned, are of a widely different nature.

1. TUSSIS, OR COUGH.

Though a mere symptom, cough is often the most marked, as well as the most important abnormality, and, in many cases, the only one demanding attention. It may be defined to be a short, interrupted or explosive sound, produced by the sudden and violent expulsion of air from the lungs. It depends in most cases upon some laryngeal, bronchial or pulmonary irritation, arising from the presence of phlegm, dust, acrid vapors, or other irritating substances in some portion of the air-passages, or from some more distant source of irritation acting upon the respiratory nerves. The irritation thus excited gives rise to a great variety of coughs, which are distinguished as either dry or moist, according as they are, or are not, accompanied by expectoration.

The general character of the cough is usually denoted by such terms as *short* or *hacking*, when the irritation is slight; and *hard*, *loud*, *harsh*, *shrill*, *barking*, *violent*, etc., when peculiar or more intense. We also have what are termed *spasmodic* or *convulsive* coughs, depending upon peculiar modifications of the exciting cause; *hoarse*, *wheezing*, or *hollow*, from the nature of the resonance; *paroxysmal*, *occasional*, *transient*, *incessant*, etc., from its frequency and duration; and *nervous*, *hysterical*, *laryngeal*, *bronchial*, *pectoral*, *stomachic*, *hepatic*, *verminous*, *syphilitic*, *scorbutic*, etc., from the seat and nature of the irritation which is supposed to produce it. It thus appears that cough, instead of being an idiopathic affection, is generally symptomatic of some other disordered condition. Although not dangerous in itself, it is often the precursor of many very fatal diseases, and should therefore never be disregarded. For this reason,

and for fuller information on this important subject, reference should be made to the several diseases of which it is a prominent symptom. We shall here notice only a few of the principal varieties, in connection with the following

SYNOPSIS OF TREATMENT.

I. CHIEF VARIETIES.

1. Catarrhal Cough.—Acon., Bell., Bry., Cham., Dulc., Gels., Hepar sulph., Ipec., Nux vom., Phos., Puls, Rum., Stic., Tart. emet.

2. Nervous Cough.—Cham., Cimicif., Con., Dros., Hyos, Ign., Ipec., Nux vom., Verat. alb.

3. Spasmodic Cough.—Cic., Cocc. cact., Con., Cupr., Dros., Hyos., Ipec., Rum., Samb., Verat. alb.

4. Laryngeal Cough.—Arn., Bry., Cham., Cina., Dros., Hepar sulph., Ipec., Merc., Nux vom., Spong., Sulph., Staph.

5. Stomachic Cough.—Ant. crud., Alum., Cina, Cocc. cact., Hepar sulph., Igna., Ipec., Nat. mur., Nux vom., Tart. emet.

II. AS REGARDS EXPECTORATION.

1. Dry Cough.—Acon., Arn., Bell., Brom., Bry. Caust., Cham., Chin., Con., Dig., Hyos., Iod., Kali bic., Merc., Nux vom., Phos., Rhus., Rum., Spong.

2. Moist Cough.—Bry., Cic., Cina, Dros., Euphr., Ipec., Lyc., Merc., Puls., Stann., Sulph., Tart. emet.

3. Mucous Expectoration.—Bar., Bell., Bry., Dulc., Hepar sulph., Merc., Phos., Puls., Sep., Sulph., Tart. emet.

4. Purulent Expectoration.—Ars. Bar. Calc. carb., Chin., Dros., Hepar sulph., Lyc., Phos., Puls., Staph., Stic., Sulph.

5. Bloody Expectoration.—Acon., Arn., Bell., Bry., Dros., Dulc., Ipec., Merc., Rhus, Sabin., Sec. cor., Sulph.

III. COMPLICATIONS.

1. With Hoarseness.—Arum, Bell., Bry., Brom. Caust.,Cham., Hepar sulph., Iod., Nux vom., Phos., Samb., Sulph.

2. With Vomiting.—Ant. crud., Carbo veg., Cocc. cact., Dros., Ipec., Lob., Nux vom., Puls., Sang., Tart. emet., Verat. alb.

3. With Cephalalgia.—Acon., Bell., Bry., Glon., Hamam., Nux vom., Puls., Sulph.

4. With Dyspnœa.—Bell., Bry., Cic., Dig., Dros., Dulc., Hepar sulph., Hyos., Igna., Lyc., Nux vom., Phos., Sulph., Verat. alb.

IV. ATTENDANT CIRCUMSTANCES.

1. Excited by Lying Down.—Ars., Bell., Con., Dros., Hyos., Lach., Merc., Puls., Rum., Sulph.

2. By Day.—Euphr., Calc. carb., Phos., Stann.

3. At Night.—Ars., Bell., Cham., Cimicif., Graph., Hyos., Lach., Merc., Nux vom., Petr., Puls., Rum., Sep., Sulph., Tart., Verat. alb.

4. In the Morning.—Alum., Ars., Calc. carb., Dros., Euphr., Lach., Phos., Puls., Rum., Sulph.

5. In the Evening.—Carbo veg., Puls., Sep., Stann., Sulph., Verat. alb., Zinc.

6. In the Open Air.—Acid. sulph., Ars., Lach., Spig., Sulph.

7. On Taking a Deep Inspiration.—Chin., Cin., Con., Cupr., Dulc., Graph., Lyc., Rum.

THERAPEUTIC INDICATIONS.

Aconite.—Short, dry, rough or hollow cough, accompanied with restlessness, heat and fever, or arising from a titillation in the larynx; spasmodic cough, with suffocation and sense of constriction in the trachea; cough with bloody mucous or muco-purulent expectoration, and short, quick and hurried breathing.

Especially adapted to coughs depending upon an inflammatory condition, or when associated with a febrile state of the system.

Arnica.—Short cough, with sticking pain in one side of the chest; dry hacking cough, from irritation in the trachea; moist cough, with expectoration of bloody mucus, or of bright-red frothy blood, or of coagulated blood and mucus; dyspnœa with soreness in the chest; false pleurisy.

Belladonna.—Dry, hoarse, barking, hollow, spasmodic, or violent cough, especially at night, or moist cough with expectoration of bloody mucus; cough accompanied with dyspnœa and palpitation of the heart, or with determination of blood to the head and chest; aphonia.

Belladonna is often useful in the first stages of inflammatory coughs, either singly or in alternation with Aconite.

Bryonia.—Cough associated with stitches in the side during inspiration, or with quick, anxious, interrupted breathing, caused by

pleuritic stitches in the chest; dry, concussive, spasmodic cough, with retching; sensation when coughing as though the chest and head would burst; heat in the chest, dyspnœa and bloody expectoration; aggravation of the cough by warmth or exercise; improved by rest.

Chamomilla.—Catarrhal cough, with hoarseness; mucus in the larynx and trachea; aching, tensive pain in the chest, increased by inspiration; burning and soreness in the larynx; wheezing or rattling in the trachea.

This remedy is especially adapted to the catarrhal coughs of children, particularly after measles, or when excited by crying.

Cimicifuga.—Dry, rough, hoarse cough, arising from irritation and tickling in the larynx or trachea; nightly coughs from laryngeal irritation; coughs associated with palpitation of the heart, or with neuralgic pains in the chest.

Cimicifuga is particularly adapted to the catarrhal coughs of children, or to coughs produced by, or associated with amenorrhœa.

Conium.—Dry cough, caused by dryness or titillation in the larynx; nervous or periodical cough; aggravation of the cough by talking, laughing, singing, or by lying down.

Drosera.—Paroxysmal or spasmodic cough, worse at night, and accompanied with retching or vomiting; nervous or sympathetic cough, occurring in paroxysms, and with or without fever or bloody expectoration.

This remedy is of special service in fully developed whooping cough, and in dry, spasmodic coughs generally, particularly after measles.

Gelseminum.—Severe spasmodic or convulsive cough, with pain and soreness in the throat and chest; catarrhal coughs, "with a metallic sound somewhat like croup;" (*Merrill;*) cough from dryness and tickling in the throat; hoarseness or aphonia, with determination of blood to the chest.

Useful in whooping-cough, and in the croup-like coughs of children, especially when the system is debilitated by warm weather.

Hepar Sulph.—Dry cough from irritation in the larynx, or from oppression of the chest during inspiration; violent paroxysms of coughing, with great soreness of the chest; dry spasmodic cough,

worse at night or in the evening; cough, with expectoration of tenacious or bloody mucus.

This remedy is more particularly adapted to catarrhal coughs of a subacute character, or when resolution is arrested or greatly retarded.

Ipecacuanha.—Spasmodic or suffocative cough, with rattling of mucus in the bronchi and sickness of the stomach; cough occasioned by titillation in the larynx or trachea; bloody cough, increased by movement or by deep inspirations; continuous, fatiguing or exhausting coughs.

Ipecacuanha is particularly serviceable in coughs accompanied with nausea or vomiting, especially the first stage of whooping cough.

Lachesis.—Cough occasioned by irritation in the larynx or trachea, or by ulcers in the throat; dry cough, or with yellow, purulent or bloody expectoration; cough accompanied with pain and soreness in the chest, stitches in the side, palpitation of the heart, hoarseness, with feeble voice, or dyspnœa.

This remedy is adapted to coughs occurring at the critical period of life, with suppressed or scanty menses, or even when the menses are profuse.

Nux Vomica.—Dry cough, with tightness of the chest; short, hacking cough, with soreness of the lungs; violent spasmodic cough, inducing headache or vomiting; dry, harrassing cough after midnight; cough associated with tenacious mucus in the throat and bronchi, congestion of blood to the chest and head, palpitation of the heart, dyspnœa, and occasional discharges of blood from the nose and mouth; aggravation of the cough by exercise or mental emotion.

Nux is a very useful remedy in the earliest stage of ordinary catarrhal coughs; also in what is called the "stomach cough," caused by over-loading the stomach.

Phosphorus.—Dry, tickling or hacking cough, caused by irritation in the larynx, trachea or bronchi; rough, hoarse or grating cough; panting or fatiguing cough, with expectoration of tenacious mucus; loose cough, with expectoration of saltish mucus, or accompanied with greenish muco-purulent or bloody sputa, roughness

and soreness in the throat and chest, pulmonary congestion, palpitation, stitches in the chest, chronic hoarseness, or aphonia; aggravation of the cough by motion or excitement.

Phosphorus is a very useful remedy in almost every kind of cough, especially when associated with disease of the lungs.

Pulsatilla.—Loose cough, with greenish, yellowish or bloody expectoration, having a sweetish, nauseous, bitter or putrid taste; violent cough, with difficult expectoration of tenacious mucus, pain in the side, dyspnœa, palpitation of the heart, scraping and dryness of the throat, and hoarseness.

Especially adapted to persons of mild disposition, and to cases complicated with amenorrhœa, or with scanty menses.

Sticta.—Hard, racking cough, with hoarseness and coryza; loose cough, with rattling in the chest, and expectoration of mucus or phlegm; aggravation of the cough at night.

Sticta is a valuable remedy in nearly every form of catarrhal cough, especially in scrofulous constitutions.

Sulphur.—Obstinate cough, whether dry or moist; cough attended with dyspnœa, arising from spasmodic constriction of the chest; dry cough, with hoarseness, dryness and soreness in the larynx and throat, pain or stitches in the chest, or aphonia; aggravation of the cough at night, or when walking in the open air.

This remedy is particularly adapted to very obstinate and chronic coughs, especially when there is a psoric condition of the system, or when resulting from the suppression of cutaneous eruptions.

Clinical Observations.—Cough is too common a symptom to need clinical illustration; we shall therefore mention, under this head, only a few rare and peculiar forms.

Ear Cough.—Dr. Horace Dobell, in his work on "Coughs, Consumption and Diet in Disease," refers to this form of cough as follows:—"Lastly, there is a cough caused by irritation of the auditory canal—and that only in some people—to which I have given the name of ear-cough. I should not have presumed to name it were I not pretty sure that this kind of cough has hitherto escaped description, and even recognition in our text-books. And this fact is the more singular, inasmuch as the sympathy between the audi

tory canal and the larynx was well know to the older writers, although lost sight of by modern authors. This kind of cough has doubtless been confounded, up to a very recent period, with nervous cough, which occurs in persons of highly nervous temperament, and is due to a convulsive action of the throat muscles; or else it has been included in that terra incognita of idiopathic coughs."

Cardiac Cough.—"This man says his doctors have treated him for asthma and bronchitis. He has a very distressing cough, dry, hacking, whistling and with decided shortness of breath, amounting sometimes to asthmatic dyspnœa. It is excited by active exertion, walking rapidly, and even by mental excitement. He is compelled sometimes to sit up in bed and cough and wheeze for an hour at a time. He feels always that he would be relieved by a free expectoration, but nauseating remedies, taken for that purpose, produce no permanent amelioration. He has had two or three slight hemorrhages, and has always felt better after them.

What is the matter with this man? Not pulmonary consumption, for notwithstanding his hemorrhages and a cough persisting for nearly a year, he has lost no flesh, but is fat and florid. Not asthma, at least neither bronchial nor spasmodic asthma, because he has no definite paroxysms of dyspnœa, leaving him well in the intervals between them. Not bronchitis, acute or chronic, because he has no fever, no persistent increase of expectoration and no auscultatory evidence of that disease, his lung symptoms are not primary but secondary.

This patient is an old rheumatic, and his real disease is mitral insufficiency, and the consequent regurgitation of blood back from the left ventricle into the left auricle at every ventricular systole. This is evident from the strong murmur heard during the systole over the whole area of the left half of the heart and even at the back, from the singular variableness of the pulse, not intermissions, or want of rhythm, but frequent variations in caliber or volume, and lastly from all the symptoms of pulmonary congestion which seem to constitute, but does not, the morbid condition.

It would be useless to give this man *Tartar emetic*, *Sanguinaria*, *Nux vomica*, *Rumex* or any other remedy addressed specially to the state of his lungs. I recommend very moderate diet, total abstinence from tea and coffee, physical repose, and *Digitalis* 3d and

Arsenic 6th, alternately every 3 hours, and I am confident that a week's time will know a considerable improvement. His cure is altogether out of the question."—*Dr. Wm. H. Holcombe.*

Reflex Nervous Cough.—"A lady of twenty-three had suffered for a long time from a nervous cough, having these peculiar features. It occurred only in the day-time, disappearing as soon as she lay down, whether at night or in the day-time. There would be a series of eight or ten dry coughs, followed by half an hour's quiet. She had also suffered for a year from frequent micturition, and a dragging sensation in the lumbo-sacral region. Various nervines had been tried ineffectually. Her history was, that her first and only pregnancy, two years before, had resulted in an abortion at three months, and had been followed by some persistent leucorrhœa and lumbo-sacral pain, aggravated by standing and walking. On examination, the larynx, chest, and abdomen were found free from disease, nor was there any sensitive point in the spine; there were two painful points in the face, however, referable to the trigeminus. On making a vaginal examination, the uterus was found enlarged, and anteverted, so that the body lay behind the pubic bone and the cervix pressed against the sacrum. These abnormal relations were remedied on her assuming a horizontal position. A double curved Hodge's pessary was introduced, which restored the uterus to its normal position, and the cough was relieved, to return, however, when, by way of experiment, the pessary was temporarily removed after a few days. After a year it was no longer required. The author's theory is that these reflex symptoms may have arisen from pressure of the body of the uterus upon the bladder, from traction upon the utero-sacral ligaments, or from pressure of the cervix upon the posterior sacral plexus or its branches—perhaps all three reasons combined."—*Dr. Malachia de Christoforis.*

Alumina Cough.—"On the 2nd of February, a delicate-looking, dark-haired woman of about forty years of age, applied for treatment for a cough which she had had for twelve days, and to which she was subject in cold weather. She said that a cough acquired in the cold season would always last till the warm weather came, unless it was sooner cured by medicines. The cough was worse in the evening and at night. The night previous she had coughed all night long, it was also aggravated on getting up in the

morning, likewise from laughing; the cough lasted a long time before any sputa was raised, and the longer she coughed the greater was the inclination; it was ameliorated by lying flat on the face. The top of the head was painful during an attack, and the paroxysms made her feel very weak. Her voice was weak and hoarse, the latter increased in the morning. The nose was red; mouth moist, and lips dry; breathing was somewhat "wheezy." She was very nervous, and easily laughed or cried.

A few doses of Alumina 30, daily, were given, and in a week or ten days the patient was well—*Dr. C. P. Norton.*

2.—SPASM OF THE GLOTTIS.

No other disease, perhaps, has received so great a number and variety of names as *spasm of the glottis*—a circumstance arising chiefly from the great diversity of opinion entertained concerning its pathology. Not to mention the more vulgar appellations, such as "inward fits," etc., it has been called "Kopp's Asthma, Miller's Asthma, Thymic Asthma, Laryngeal Asthma, Cerebral Croup, Spasmodic Croup, False Croup, Suffocative Catarrh, Spasm of the Chest, Carpo-pedal Spasm, Goitre of Infants, Child-Crowing, Laryngismus Stridulous and Spasm of the Glottis. As we shall presently see, many of these names are misnomers, the disease having no affinity with either asthma, catarrh, or croup.

Symptoms.—Spasm of the glottis is confined to infancy and early childhood. Generally, there are no premonitary symptoms, at least of a marked character, the child being suddenly seized with a fit of suffocative breathing, becoming dark-red or purple in the face, with red, watery and protruding eyes, the head drawn back, the hands clenched, the toes bent in, and the whole body struggling in the agony of suffocation. This condition, after lasting a minute or two, is followed by a forced inspiration, attended by a loud crowing sound, produced by the violent rush of air through the narrow chink of the rima glottidis. After the fit, the child, exhausted by its violent struggles during the paroxysm, generally falls asleep; but on awakening, appears weak, pale and irritable. In some severe cases, the paroxysms recur at very short intervals,

being repeated as often as thirty or forty times a day, but generally they occur far less frequently, especially at the commencement, happening, it may be, not oftener than once a day, or once in several days, but increasing in frequency and severity as the disease progresses.

Unless the disease is severe, the child generally appears well, or nearly so, during the intervals between the paroxysms, but when the fits are frequent, or the disease is complicated with intestinal disorder, convulsions, dentition, or gastric and hepatic derangements, the constitution sympathises with the disorder, producing more or less fever, with hurried respiration, quick pulse, coated tongue, unnatural alvine discharges, and a pale, unhealthy appearance of the skin.

After continuing a few weeks, the disease may subside, either spontaneously, or in consequence of the removal of some previous source of irritation, such as the cutting of teeth; but sometimes it proves fatal, either suddenly in one of the paroxysms, or, after long illness, in convulsions.

Diagnosis.—Spasm of the glottis is liable to be confounded with whooping cough, and with croup. In spasm of the glottis, the cough, when present, follows the whoop, while in whooping cough it precedes it; besides, there is not, as in the latter disease, any expectoration, vomiting, or rattling of mucus in the chest.

The disease may be distinguished from croup by the paroxysmal character of the affection, since in croup the difficulty of breathing is constant, or nearly so; besides, in spasm of the glottis, inspiration only is arrested, but in croup, both inspiration and expiration are affected; moreover, in the former there is generally neither fever nor cough, but croup, on the contrary, is generally accompanied by severe cough and by fever; *hoarseness*, also, which is always present in croup, is generally absent in spasmus glottidis, though there is sometimes great hoarseness, produced, for the most part, by crying.

Prognosis.—Spasm of the glottis is always a serious disease, and under allopathic treatment, has proven exceedingly fatal. Old-school writers generally admit a mortality under their system of practice of over thirty per cent.; while some of them, as Gervino, Gardien and Dr. John Clarke, affirm that the patient rarely recovers. This, however, is not the case under homœopathic treatment; on the contrary, in our own practice, we have never lost a

case of this disease, and the same may be said of many other homœopathic practitioners. The chance of recovery, however, will depend, to a great degree, upon the constitution of the patient, the special causes of irritation, and the particular character of the complications; as, if the child be scrofulous or weakly, the digestive organs much deranged, and the assimilative functions greatly impaired, and especially if cerebral complications exist, there can be but little hope, though recoveries have been known to occur even under these circumstances.

Etiology and Pathology.—Much importance has been attached to an unusual development or swelling of the thymus and thyroid glands, as a cause of this disease. But as the enlargement of these glands has not been generally observed to be associated with spasm of the glottis, it is more probable that the spasm depends upon a reflex action, excited by some other source of irritation, such as teething, gastric or intestinal irritation, or pulmonary congestion, the disease, as before stated, having been frequently known to subside after the relief of such conditions. Such, also, is the opinion of Dr. Marshall Hall. He says:—"It originates in:

I.—1. The *trifacial* in teething.

2. The pneumogastric, in over or improperly-fed infants.

3. The *spinal nerves*, in constipation, intestinal disorders, or catharsis. These act through the medium of

II.—The *spinal marrow*, and

III.—1. The *inferior* or *recurrent laryngeal*, the constrictor of the larynx.

2. The *intercostals* and *diaphragmatic*, the motors of respiration."

Treatment.—The facts just stated suggest what ought never to be lost sight of in the treatment of this disease, namely, the importance of correcting, as far as possible, every bodily function. This will be best effected by losing sight, at it were, of the local affection, and directing the treatment during the intervals between the paroxysms to the whole *ensemble* of symptoms.

SYNOPSIS OF TREATMENT.

1.—*During the Paroxysm.* Aconite, Sambucus; *these remedies may generally be advantageously alternated, and if promptly*

given will usually be found sufficient.—Sanguinaria, Lobelia; *these remedies are generally promptly curative, when used low;* so, also, is *Moschus, Kali brom.*—Belladonna, Gelseminum; *congestion of the brain*—Corallia; *scrofulous cases*—Ipecacuanha; *mucous rattling, with blueness of the face and sighing respiration*—Cham., Laurocerasus, Cup., Hyos., Opium, Puls., Verat. alb.

2.—*Chronic or Protracted.* Arsenicum, Carbo veg.; *great debility*—Phosphorus, Hepar-sulph.; *cough, with wheezing and soreness*—Phytolacca, Kali bic., Kali brom., Spongia, Tartar emet.

Auxiliary Treatment.—*Lancing the gums* is one of the most efficient means of giving relief, whenever the disease depends upon the irritation of teething. The *warm bath* is also an efficient method of relaxing spasm, and should always be resorted to whenever suffocation becomes imminent. The local treatment recommended for croup (q. v.), is likewise beneficial in this disease, and should always be employed when needed. Additional remedies and treatment may be found under the heads of *Laryngitis* and *Asthma* (q. v.)

Clinical Observations.—*Phytolacca decand.*—Last winter my babe of about ten months, was taken with difficulty of deglutition, when nursing. This was partially relieved by Belladonna. But one day she was suddenly seized with a fit of suffocation, which seemed as if it would prove fatal. Then followed all the prominent symptoms of "Millers' asthma." Frequent spasmodic closure of the larynx; drawing of the thumbs into the palm; flexion of toes; distortion of the face; muscles of the eyes affected so that the motions of one eye were independent of the other, etc.

The prognosis of this disease has always been held serious—even the mildest cases at times terminating fatally.

With all a parents's solicitude I searched the Materia Medica. The following remedies were successively tried, with no satisfactory result: Sambucus, Ipecac, Arsenicum, Opium, Tartar emetic, Gelseminum, Belladonna, Nux vomica, Kali bichromicum, Veratrum viride and Aconite. Some of these seemed to hold the disease in check, especially Sambucus, Ipecac., Tartar emetic, and Kali bichromicum, but after giving each a fair trial, there was no prospect of their curing the complaint.

After again trying some of the above remedies, by the advice of Dr. Ludlam, Sen., we removed the child to the country, and I renewed my search for the specific. I finally settled upon *Phytolacca decandra*, and preparing it—6 drops of the tincture to 12 teaspoonsful of water—gave a teaspoonful every hour. After two or three doses, the symptoms were aggravated, especially the spasmodic contraction of the muscles of the eyes. Then ceased the Phytolacca and gave Veratrum viride to antidote its effects.

The result of the experiment with Phytolacca, convinced me that it was the remedy, so on the next day one half the number of drops were prepared and given as before. The improvement was immediate and decisive, and within a week the disease had entirely disappeared."—*Dr. A. M. Knapp.*

Chlorine Gas.—According to Prof. Dunham, who made a partial proving of this gas, it "produces a perfect medicinal picture of this disease."

"An infant seven months old, well-developed and large; fourth child of healthy parents; was seized three weeks ago with spasmodic affection of the respiratory organs; would suddenly, without warning, make a long inspiration with a slight crowing noise; attempt to exhale would fail; another crowing inspiration followed by forcible ineffectual effort to exhale. This succession of spasmodic efforts would follow each other till the child became blue around the mouth, and sank into partial unconsciousness; frec respiration would then follow, and then a deep sleep. Sometimes convulsive movements appeared as the paroxysm was subsiding. Attacks came on after excitement, frequently during sleep, most common after midnight, as many as thirty or forty attacks in twenty-four hours. Emaciation progressing rapidly, losing appetite, strength, and playfulness; face pale and bloated; eyes dull and glossy. Homœopathic treatment and change of air had failed; an older child of the same family had died during the past year with the affection, terminating in four weeks in convulsions. In that case autopsy revealed no organic lesion; simply emaciation and atrophy. The disease had evidently advanced almost to the second or convulsive stage in which the prognosis is decidedly unfavorable.

A saturated solution of *Chlorine Gas* in water of 60° Fahrenheit was prepared; of this was made the first centesimal dilution, re-

taining still the odor of chlorine. Of this twenty drops were dissolved in four tablespoonfuls of water; a teaspoonful to be given in a porcelain spoon every two hours. A few drops to be placed in the mouth at the beginning of each paroxysm, beginning at 4 P. M., June 24th, when the child had had forty paroxysms within the last twenty-four hours.

During the succeeding twenty-four hours there occurred but four paroxysms, only one of which began with any severity, and this one was instantly arrested midway by a few drops of the solution placed upon the child's tongue. During the night of the 26th not a single paroxysm. Appetite and playfulness returned, bloated aspect of the face and dulness of the eyes disappeared."—*Dr. Carroll Dunham.*

Dr. D. A. Gorton, of Brooklyn, publishes the two following cases in adults:

Case 1. Mrs. R., aged 60 years, a moderately stout, fleshy woman; florid complexion, sanguine temperament, hereditary predisposition to apoplexy.

For several years the lady has had annual attacks of this disease in its most aggravated form. In each instance death seemed imminent from asphyxia. The attacks last from three to six hours; come on suddenly; not unfrequently during sleep; without previous warning; generally in the early spring, in cool damp weather, and exposure to cold. They are relieved by application of moist heat, inducing perspiration.

The subjective symptoms are:—Violent strangulation; the attempt to breathe is accompanied by loud croaking and sawing sounds; the patient is compelled to sit upright, with the chin extended; hoarse, harsh cough, when that effort is possible—mostly dry, aphonia, face puffed, alternating between bright and dark redness; lips and tongue bluish; pulse irregular, intermittent, sluggish; no fever. The attacks are followed by hoarseness and cough, which continue from two to three weeks.

Lachesis, Belladonna, Bromine, Iodine, Sambucus n., Tartar emetic, etc., have been administered, each in their turn, without any gratifying results. The first attack was promptly relieved by Lobelia inflata tincture in tea-spoonful doses, repeated every half hour until nausea and perspiration were induced. A subsequent attack

was relieved with Bromine 30, and a sponge wet in hot water applied to the throat. The cough and hoarseness which followed subsided pleasantly under the influence of Sambucus niger 30. The last attack was relieved, after much suffering, by the fumes of slacking lime, at the suggestion of an allopathic physician.

Case II. Mrs. E., aged 30; nervo-bilious temperament; rather delicate in physique; highly sensitive to atmospheric changes. One side of the face was paralysed a few years ago by a fall on the back of the head; since which accident the lady has been subject to repeated attacks of "spasmodic croup." The attacks are preceded by exposure to cold, followed by loss of voice; barking cough; spasms of the glottis; suffocative dyspnœa; dysphagia. The strangulation, fever and crowing cough, simulate membranous croup, for which the disease has frequently been mistaken by various physicians.

Belladonna 30 affords prompt relief of the paroxysms. So also do compresses of hot water applied to the throat. The catarrhal cough which remains yields speedily to the action of Bromine 30.

Inhalations of Ammonia.—"Attacks of spasm of the glottis are much more violent than those of false croup, being accompanied by contraction of the muscles of respiration, especially of the diaphragm, and sometimes even by general convulsions. In the treatment of this affection there is rarely time to employ the various methods mentioned in the books, such as electricity, frictions, chloroform, etc., and consequently the plan proposed by M. Charon seems to be all the more practical. This physician states that inhalation of ammonia rarely fails to cut short the attack. He advises mothers, who have children subject to attacks of spasm of the glottis, always to carry a bottle of ammonia with them. He cites the case of the wife of a physician, who followed this advice, and whose child always rapidly recovered from the spasm with the help of ammonia. Unfortunately, one day she did not have her flask with her, and while she was looking for it the child died asphyxiated."—*Journal de Med. et de Chir.*

Incarcerated Glottis.—"In the summer of 1867, I had under professional care a scrofulous male infant, between two and three years of age, with protracted laryngismus stridulus; the suffocative symptoms, as described by the mother, being unusually intense. On one occasion an intense paroxysm occurred in my presence, and

as it failed to yield to cold water dashed upon the face and neck, or to ammonia held in front of the nostrils, I plunged my finger deep into the child's throat and felt the epiglottis so forcibly drawn down by the spasmodic action of the aryteno-epiglottic muscles, that its free edge had become wedged between the posterior face of the larynx and the wall of the pharynx, occluding the larynx completely. Carrying the finger to the left side of the larynx, I found it comparatively easy to free the epiglottis from its incarcerated position, and with the ensuing deep inspiration of air the impending asphyxia was averted. The nature of the difficulty was explained to the mother, who was instructed in the manipulation necessary to overcome it. The constitutional and other remedies, and other measures instituted in the hope of subduing the disposition to spasm were unavailing, and the child finally died some weeks later in a paroxysm similar to the one described.

The second case occurred during the spring of 1877, in a scrofulous male infant, nineteen months of age. I had the opportunity of verifying the same sort of incarceration of the epiglottis from spasmodic action, on special occasions, one of which was in the presence of an esteemed colleague, during a consultation held as to the propriety of performing tracheotomy, in view of the frequent recurrence of the paroxysms. Unfortunately it was determined to defer the decision for twenty-four hours, in order to test the efficacy of large doses of bromide of potassium; and shortly before the early hour fixed for the visit on the following morning the child died in a paroxysm, which the mother was unable to overcome by manipulation, although she had previously succeeded in elevating the epiglottis in several paroxysms.

I am inclined, therefore, to believe that the spasm of laryngismus affects the aryteno-epiglottic muscles, in some instances at least, as well as those muscles which close the glottis, and that the incarceration of the epiglottis, continuing after the relaxation of the spasm, may be an immediate cause of death.

In undoubted cases of this kind, tracheotomy may be absolutely indicated as necessary to avert asphyxia in a recurring paroxysm of the spasm."—*Dr. J. Solis Cohen.*

3.—ASTHMA.

PHTHISIC; DYSPNŒA.

Although the term *asthma* is, strictly speaking, synonomous with *dyspnœa*, or difficulty of breathing, and is frequently so used, both in common parlance and by scientific writers, yet, with a view to greater accuracy, and to avoid as much as possible unnecessary repetition, we shall restrict the term to those forms of dyspnœa that are essentially *spasmodic* and *non-inflammatory*. This will exclude the consideration, in this place, of those varieties of difficult breathing which depend upon high inflammatory action within the throat and chest, such as is met with in laryngitis, croup, bronchitis, etc., (q. v.)

Definition.—Thus limited, asthma may be defined to be, a difficulty of breathing, recurring at intervals, accompanied with more or less cough and expectoration, wheezing, and sense of constriction in the chest or throat, and usually unattended by fever or high inflammatory action.

Varieties.—Of the various forms of this disease, we shall notice only the *simple* or *spasmodic*, the *nervous*, the *congestive*, and the *dry* and *mucous catarrhal*.

1. Simple or Spasmodic Asthma.—Simple asthmatic attacks occur in paroxysms, with little or no precursory warning. In some cases, however, the patient, for a short time previous to the attack, and especially towards evening, feels languid and oppressed, yawning and dozing, with more or less flatulence, or distention of the stomach, and constriction of the chest. Sometimes the attack is preceded by irritability and restlessness, with dryness of the throat and nose, headache, and other evidences of slight fever, and, occasionally, there is an increased secretion of saliva and urine. Generally, however, the increased flow of urine, which almost always attends the complaint, does not come on until after the paroxysm sets in. Notwithstanding these premonitory symptoms, the nature of which is commonly well understood by the patient, the asthmatic generally retires to bed, and sometimes falls into a sound, but more

frequently into an anxious and disturbed sleep. After some hours, it may be, of such rest, the patient is suddenly aroused by a sense of impending suffocation. He feels, as it were, a heavy weight upon the chest, producing a great tightness and constriction, that almost prevents its expansion. Gasping for breath, he is forced immediately to get up, and, panting and wheezing, he flies to one of the windows, which, with the doors, he orders to be left wide open, where he sits, or out of which he leans, for hours, even in the coldest weather, anxious only to obtain a sufficiency of fresh air. Although during the paroxysm the extremities are cold, and the face and trunk covered with perspiration, yet owing to the highly excited state of the nervous system, the patient seldom suffers, either at the time or afterwards, from the unusual exposure. During the hight of the paroxysm, the patient, in the language of Floyer, "can neither cough, sneeze, spit, nor speak freely," though there is usually a dry, tickling cough, which is interrupted and imperfect, in consequence of the impeded respiration. The face is either pale or red, the countenance anxious and distressed, the pulse, though sometimes full and regular, is generally small, feeble and intermittent, and the action of the heart tumultuous. The bowels are generally spasmodically relaxed, and there is also a copious secretion of pale, watery urine. The characteristic symptom, however, is the distressing dyspnœa, produced by the painful constriction of the chest, and the consequent feeling of impending suffocation.

After the lapse of two, three or four hours, the intensity of the symptoms begins to diminish, and the inspirations become fuller and freer. The cough now becomes loose, and is attended by free expectoration, which is a sign that the paroxysm is undergoing resolution. Soon afterwards, the exhausted patient, relieved of his intense and long-continued suffering, generally falls into a refreshing sleep, and on awakening, finds himself for the present fully restored.

Sometimes the disease begins and ends with a single paroxysm; but much more frequently, another similar one occurs on the following night, and is followed by others in regular succession, for a few days, when, after gradually undergoing abatement, they cease altogether, and the patient is restored to his usual health. After the attack has ceased, there is generally more or less pain and soreness of the chest remaining, which in some instances resembles

the stitch of pleurisy, but is easily distinguished therefrom by the history of the case. It is a kind of pleurodynia, caused by the violent action of the respiratory muscles, in the abortive attempt at breathing and coughing.

After a longer or shorter interval, amounting it may be to months, and even years, the patient experiences a fresh attack, which, after running a similar course to the first, again subsides, to be followed in succeeding months or years by others, so as to be protracted through many years, and even through life. As a general rule, their occurrence is not governed by any fixed law of periodicity, though in some few instances they have been known to return with marked regularity; as, for example, at the menstrual period, or at the times of new and full moon. Generally, however, there is great irregularity in the periods of their return, even in the same case, the intervals varying from a week, or less, to several years; and sometimes, though very rarely, suddenly disappearing, never to return. This great diversity is no doubt owing to the sensitiveness of the patient to the influence of a multitude of exciting causes, and to the possession of a peculiarly impressible temperament. The latter is generally hereditary; and constitutes such a strong predisposition to the disease, that in some instances simple changes in the weather, odoriferous particles floating in the atmosphere, and even the change from light to darkness, or from one room to another, is sufficient to induce it. Less impressible constitutions are excited by irritating inhalations, such as dust, vapors or gas, or by violent respiratory efforts. Of course, whatever tends to debilitate the system, renders those who are predisposed to the disease more susceptible to the influence of the various exciting causes. Hence, masturbation, excessive venery, debilitating losses, mental depression, protracted illness, fatigue, and the indulgence of the passions, are all calculated to excite the disease.

Asthma is far more common in the middle period of life than in infancy or old age; and is said to be more frequent in the male than in the female. It is not confined to any station in life, affecting those in easy circumstances with about the same frequency, apparently, that it does the laborer, and those in humble life. Every nationality, also, is subject to it in about equal proportions, though it is said to be more common among those who inhabit the temper-

ate regions, than among those who reside in very hot or very cold climates.

As other forms of asthma are, for the most part, merely varieties of the spasmodic, many of the observations just made will apply equally to them, and we shall therefore be very brief in our description of them.

2. Nervous Asthma.—This, as the name implies, is the asthma peculiar to nervous persons. It is mostly confined to females, generally depends upon some derangement of the menstrual function, and is the same thing as the so-called *hysteric asthma.* The disease is frequently caused, and is sometimes instantly removed, by fright; indeed, mental emotion is a frequent cause of the complaint. Sometimes the disease seems to be purely sympathetic, some remote affection appearing to produce spasm of the bronchia through the cerebro-spinal system, or by reflex action. Of this nature, probably, are the purely hysteric cases above alluded to. Other cases, again, are symptomatic, depending upon some disease immediately affecting the pulmonary tissue and nerves, such as tumors within the chest, diseases of the heart, hydrothorax, etc.

3. Congestive Asthma.—This form of asthma, like the last, scarcely requires description, the name alone being sufficiently distinctive. As simple determination of blood to the chest is not usually attended with very marked dyspnœa, at least sufficient to constitute the asthmatic paroxysm, it is evident that something more than simple pulmonary or bronchial congestion is required to produce it; in other words, there must be some modification of the nervous condition of the parts involved, previous to the afflux of blood to them. Indeed, such is doubtless the case in almost every form of asthma; and this is what gives the disease its destinctive character. The congestion, therefore, is in these cases merely the exciting cause. Dr. Perry, in his El. Pathol., § 474, cites a case where, without any previous disorder of the chest, the patient died in fifteen or twenty minutes, with every symptom of spasmodic asthma." Fatal cases, however, are very rare. Generally, the congestion is merely sufficient to induce the disease in those who are predisposed to it; in others, it produces simple dyspnœa.

4.—Catarrhal Asthma.—This is a form of asthma that is complicated with, and depends upon a catarrhal state of the bron-

chial mucous membrane. Like the simple or spasmodic form, it is chronic, generally extending through life. When complicated with the disease called *dry catarrh*, it is called *dry catarrhal asthma*, or simply *dry asthma;* and when connected with the common mucous catarrh, it is called *mucous* or *humoral asthma.* Mucous catarrhal asthma is sometimes the sequel of the dry, but it is more frequently the consequence of repeated attacks of the acute, of which the congestive asthma above described is the most simple and common variety. In other cases, it is the sequel of bronchitis, which is generally associated with it in the chronic form. This is the "humoral asthma" of old authors, and is most common in old age, though it is frequently met with in the young. Every fresh cold, by adding to the catarrhal condition associated with it, increases the dyspnœa, and renders the paroxysms more frequent and severe.

Physical Signs.—The physical signs of asthma change their seat with great rapidity, the various sounds appearing and disappearing in different portions of the chest during the paroxysm. The supra-sternal and supra-clavicular fossæ, the intercostal spaces, and the epigastrium, recede during inspiration, which is short and jerky; expiration, on the contrary, is prolonged and wheezing. The chest is greatly distended, and continues so during the paroxysm, there being scarcely any expansile movement. Resonance on percussion is increased all over the chest, and rhonchal fremitus may be felt, but vocal vibration is not very markedly affected. The vesicular murmur is almost entirely absent. The various kinds of sibilus and rhonchus, such as whistling, cooing, squeaking and surring sounds, with, occasionally, mucus râles towards the termination of the paroxysm. The appearances found after death are usually such as result from chronic bronchitis and emphysema, with dilatation of the right side of the heart.

THERAPEUTIC INDICATIONS.

Aconitum.—Anxious, short and difficult breathing, with spasmodic constriction of the air-passages; suffocative cough, particularly at night, accompanied with a hoarse or shrill voice; headache, with vertigo; bloody expectoration; great anguish; inability to lie down or to talk; palpitation of the heart; quick full pulse and red face.

Aconite is a valuable remedy in the congestive and nervous varieties of asthma, occurring for the most part in young plethoric persons, especially females with suppressed menses; also when caused by mental emotion, or by determination of blood to the chest.

Arsenicum.—Suffocative paroxysms, particularly at night, with panting and wheezing; painful constriction of the chest, with great anguish, expectoration of viscid mucus, violent palpitations, cold perspirations, and great exhaustion. The paroxysms are excited by bad, rough weather, cold air, and change of temperature; and are aggravated by warmth and movement.

Belladonna.—Dyspnœa, with pains under the sternum, especially at night; dry, spasmodic cough; moaning respiration, sometimes deep, at other times short and quick; paroxysms of dyspnœa with loss of consciousness, red and flushed face, cardiac palpitation and anguish, and vertigo, especially on rising.

Belladonna is a valuable remedy for children, especially in congestive asthma, or where there is a full habit, with a predisposition to cerebral or spasmodic affections.

Bryonia.—Dyspnœa at night, or towards morning; frequent cough, with sharp pains in the chest; tickling in the throat, and expectoration of frothy or viscid mucus; aggravation from moving or talking.

This remedy is of special value in attacks of acute catarrhal asthma, after *Ipecac.*—(JAHR.)

Cactus.—Spasmodic dyspnœa, with constriction of the chest, and sense of impending suffocation; fainting, with feeble circulation, cold perspirations, determination of blood to the chest, and palpitation; worse at night, and on lying down.

Cactus is invaluable in cases attended with spasmodic action of the heart.

Cocculus.—Dyspnœa produced by spasmodic constriction of the air-passages; determination of blood to the chest, with palpitation of the heart, and a fatiguing cough, especially at night; hysteric spasms of the bronchia, with moaning, sighing and trembling.

This remedy is particularly adapted to hysteric females.

Cuprum.—Suffocative paroxysms of dyspnœa, with wheezing,

whistling and rattling in the chest, short stifled cough, spasm of the abdominal muscles, determination of blood to the head and chest, palpitation of the heart, spasmodic contraction of the chest, attended with sighing, moaning and frothy expectoration.

Cuprum is particularly adapted to hysteric females, especially when the paroxysms are induced by fright or anger, or at the menstrual period.

Eupatorium per.—Dyspnœa, accompanied with anxiety, sleeplessness and perspiration; dry, hacking cough, with hoarseness and roughness of the voice; soreness and heat in the chest, with inability to lie in the recumbent position, or on the left side; nausea and vomiting, with trembling and extreme prostration, copious flow of limpid urine, or watery diarrhœa.

Particularly adapted to acute catarrhal cases, complicated with considerable bronchitis.

Ipecacuanha.—Suffocative dyspnœa, especially at night, caused by spasmodic constriction of the air-passages; anxious and moaning respiration, attended with mucous rattling in the chest, palpitation of the heart, short, barking cough, lividness of the face, with panting breathing and spasmodic stiffness of the body; face alternately cold and hot, and covered with perspiration.

This remedy, like the last, is specially adapted to acute cases, particularly in children, or when there are large accumulations of mucus in the bronchial tubes.

Kali hydriod.—Dry, hacking cough, with great oppression of breathing, pain in the chest, and scanty expectoration.

This has been found to be a very valuable and reliable remedy in asthma, when used low, especially in protracted cases. According to Dr. Clark, old-school, the successful cases equal one-half.

Lobelia inf.—Paroxysmal dyspnœa, with a sense of fullness and tightness in the chest; deep, sighing inspirations, with a feeling of insufficiency; pain in the chest, increased by a full inspiration; short, dry cough, restlessness and exhaustion.

Suitable to nervous, and also to acute catarrhal cases, for which it is always a valuable palliative.

Moschus.—Suffocative dyspnœa, with spasmodic constriction

of the chest, constant urging to cough, determination of blood to the head and lungs, and red, or cold and pale face, with perspiration.

Moschus is particularly adapted to the asthmatic attacks of hysteric females and children.

Nux vomica.—Paroxysms of dyspnœa, occurring at night or in the morning, and accompanied with a dry, racking cough, wheezing respiration, determination of blood to the chest, palpitation of the heart, heat and burning in the lungs, painful and anxious breathing, and a sense of constriction across the lower part of the chest; amelioration of the symptoms by lying on the back, sitting up, or by changing the position.

One of the very best remedies for asthma when the digestive system is in fault.

Opium.—Suffocative paroxysms occurring during sleep, with choking and rattling respiration, spasmodic contraction of the chest, stifling cough, deep, stertorous breathing, and livid face.

Of special value in recent catarrhal cases; also in nervous asthma.

Phytolacca dec.—Dyspnœa, with aching pain, particularly on the right side of the chest; dry bronchial cough, with sensation of roughness in the trachea and large bronchi.

Pulsatilla.—Spasmodic dyspnœa, especially at night, with palpitation of the heart, sensation of choking in the throat, short, quick, rattling respiration, and frequent cough.

Particularly adapted to hysteric females, especially when the menses are scanty or suppressed.

Sambucus.—Suffocative fits of children, especially at night, attended by great anguish, wheezing respiration, livid swelling of the face, hands and feet, hoarse and hollow, or shrill voice, and profuse perspiration.

This is one of our best remedies in the acute catarrhal asthma of children, after *Ipecacuanha.*

Tartarus emet.—Suffocative paroxysms, especially at night, with fits of choking, determination of blood to, and rattling of mucus in the chest, palpitations of the heart, stifled cough, and anxiety.

Veratrum.—Suffocative paroxysms of dyspnœa, with spasmodic cough, determination of blood to the head and chest, cardiac anguish and oppression, nausea, anxiety, great prostration, cold perspirations.

This remedy can generally be relied upon to palliate an attack of asthma, even when it fails to effect a cure. It is particularly adapted to cases caused by uterine congestion from suppression of the catamenia.

Auxiliary Treatment.—Asthma is such a peculiar and distressing complaint, that we feel fully justified, in many cases, especially in those of a chronic and hereditary character, in recommending merely palliative treatment. Of this nature is the use of narcotics and stimulants, such as coffee, tobacco, stramonium, etc. Sir John Pringle says that "Floyer, during the latter years of his life, kept free from, or at least lived easy under his asthma, from the use of very strong coffee; and he also assures us, on his own authority, that coffee is the best remedy for the asthmatic paroxysm that he has seen. He says the coffee should be made as strong as possible —"an ounce to the dish"—and the dose repeated every fifteen minutes. The coffee should be taken hot, and without sugar or milk. This practice is sanctioned by Drs. Bree, Reynolds, Ruddock, and others. The smoking of tobacco and stramonium leaves during the paroxysm is often very beneficial, especially the latter, the virtues of which are such as to entitle it, in the estimation of many old asthmathics, "to the first rank among the temporary remedies of asthma. (Forbes.) In some cases, particularly when tobacco is used, much nausea and vomiting, as well as vertigo and depression, ensue; and in some cases, also, instead of affording relief, they greatly aggravate the dyspnœa; hence, great care is necessary in the employment of these remedies, as fatal effects have sometimes resulted from a too prolonged and careless use of them.

Inhalations.—The inhalation of *Chloroform*, *Ether*, and other anæsthetic remedies, and that peculiar remedy, the *nitrite of Amyl*, will generally afford instantaneous relief during the paroxysm, but these agents are too powerful and dangerous to be entrusted to any but professional hands. Inhaling the fumes of burning *nitre* often gives speedy relief. Blotting paper, saturated with a solution of the nitrate of potassa, and allowed to dry, may be

ignited and held near the patient; or a warm saturated solution may be used, the fumes of which are said to be equally efficacious.

Galvanism.—While electricity and magnetism have furnished little more than negative results in this disease, "strikingly good effects are at times witnessed from the employment of galvanism," (DUNGLISON.) It must be admitted, however, that, as a general rule the remedy is not a reliable one.

Mineral Waters. — Certain mineral waters have become famous for their beneficial effects in asthma. Some, as the chalybeate, doubtless owe their virtue to their tonic action. These, we apprehend, will prove most beneficial to the pale, delicate, chlorotic class of asthmatics, to dyspeptic patients, and to such as are of a weakly, nervous temperament. Others, like the magnesian and other alkaline sulphates, by depleting from the portal system, relieve congestion of the pulmonary and bronchial membranes; while others, again, such as the sulphurous, act chiefly upon the skin and mucous tissues, relieving the hyperæsthesia of the bronchial membrane, relaxing the spasm, and restoring the parts to a more healthy action. But, says Sir James Clark, there is more difficulty in selecting a mineral water for the asthmatic patient than for any other; as the source most suitable to the diseases which complicate it, may be in a situation which decidedly disagrees with the asthma.—See remarks below on

Climate and Change of Air.—Nervous diseases are well-known to be increased or alleviated by a change of air, and asthma is no exception to the general rule. Indeed, such is the remarkable susceptibility of this class of patients, that very slight changes, as to distance, such as from one town to a neighboring one, from the city to the country, and *vice versa*, are often sufficient to provoke or to allay an attack; and this, too, when there is no appreciable difference in the nature of the climate or situation. We once had a patient who was unable to remain a day upon his farm, either summer or winter, though the distance from his town residence did not exceed three miles.

Sir Thos. Watson, in his lectures, mentions the case of an acquaintance who could sleep in one inn in Cambridge, and not in another; and who assured him that he never escaped an attack if he attempted to sleep in the back part of Meurice's hotel, in Paris, but

never suffered if he slept in the front part of it. Many such cases are on record, but it is impossible to explain them on general principles. Indeed, the very atmosphere which is found deleterious to one asthmatic, is sometimes highly beneficial to another. For example, Dr. Bree speaks of a gentleman who could never sleep in the town of Kilkenny, in Ireland, without having an attack of asthma; while Lord Ormond, on the contrary, could never sleep any where else. These facts, with others of a like nature, would seem to justify the inference, that the best means of preventing an attack would be, for the patient to remove to a place where the conditions of the climate and soil are of an opposite character to those in which he usually suffers. At the same time, there can be no doubt that, as a general rule, a mild, dry and equable climate is much more favorable to the asthmatic than one which is cold, damp and variable.

Diet and Regimen.—There is no disease, perhaps, in which moderation in eating and drinking is of more consequence than in asthma. Indigestion is not only a very common exciting cause of an attack, but among the numerous complications, dyspepsia, with its long train of disorders and reflex actions, holds a prominent place. Hence, the diet should be regulated with the most scrupulous care, not only as regards quantity and quality, but the times for eating should be fixed and closely observed. Experience, and the nature of the complications, will determine the special character of the diet in particular cases; but as a general rule the more simple it is the better. Rich, highly seasoned dishes, heavy suppers, stimulating beverages, and every thing known to disagree with the patient, should of course be avoided. As the paroxysms generally set in at night, the principal meal should be taken early in the day, and the evening repast, if any, should be light, so that the process of digestion may be over before bed-time. Late hours are harmful, and so is every vicious habit, the indulgence of which weakens the nerves and lowers the tone of the general system; on the contrary, regular exercise in the open air, whether active or passive, is beneficial, provided it be taken an hour or two after meals, and not carried to the point of fatigue. Cold bathing, and especially the regular use of the shower-bath, has been found to be highly useful; but warm bathing, on the other hand, is generally hurtful. In a word, the

observance of suitable dietetic and hygienic rules will do much to alleviate, and in many instances to prevent asthmatic attacks, even in the most obstinate cases.

Clinical Observations.—Among the remedies recently introduced, the most successful are *Grindelia rob.*, *Jaboranda*, *Eucalyptus glob.*, and *Quebracho.*

"Dr. Arthur Berthold, of Dresden, prescribed *Quebracho* to a gentleman of sixty-five years who suddenly was taken down with a severe attack of asthma convulsivum. He was found in his easy chair, the upper body bent forward, holding spasmodically with his hands the side-supports; his voice hoarse and short, the face of a deep red, the jugular veins prominent; and thus he tried to narrate the beginning of the attack, but the dyspnœa prevented him from doing it. The doctor immediately ordered tincture of Quebracho, of which he took a teaspoonful. At this time, 8 P. M., respiration was 60. He took the same dose twice in three hours, and at 11:30 P. M. patient was able to sit up comfortably, respiration 30, voice with better timber, face less injected, jugular veins hardly prominent. Next day patient was fully recovered from his paroxysm.

In fourteen other cases Berthold saw similarly good effects. A young man of twenty-five, suffering for years from emphysema pulmonum and periodical asthma, requested attendance on account of his asthma. Tinct. Quebracho, a teaspoonful every three hours. Next day no amelioration, but on the third day remission of the frequency of respiration. Former attacks prevented working for a week or two; this time he was able to resume work in five days. A nice palliative effect was seen on a lady of sixty, suffering from mitral insufficiency with stenosis, who was frequently attacked by most horrible dyspnœa, so that she had to sit up during the whole night. Quebracho shortened these attacks considerably and left her with longer intervals of ease. A similar effect was observed on an old minister of seventy-two, suffering from fatty heart with dilatation of the right ventricle, intermitting pulse and enormous dyspnœa at the slightest bodily exertion. The palliative benefit of Quebracho was decided. A lady of sixty-eight, also suffering from fatty heart and dyspnœa, found the same temporary relief from Quebracho, though the œdema always needed again the use of Digitalis.

In phthisical patients it also acts well in relieving the dyspnœa, though it shows no effect whatever on the original disease.

The extractum Quebracho spir., that is, the resinous residue, soluble in alcohol, is also an excellent remedy in acute and chronic diarrhœa, and has done good service in the diarrhœa of children.

Dr. Picot prescribed Quebracho in three cases of dyspnœa from preumonia catarrhalis, asthma bronchiale and valvular affection. All three patients found subjectively great alleviation, and were well satisfied with its action. The frequency of breathing diminished in the patient with pneumonia catarrhalis, though the physical manifestations remained the same.

Shortly afterwards he made an Alpine journey, and the ascension of the mountains caused great dyspnœa. He usually counts 16 respirations and 64 pulsations. During the first day of the ascension the respiration rose to 42, pulse 94, with a very disagreeable sensation of dyspnœa. On the second day, before beginning his journey, he took three powders—fifteen grammes, tincture Quebracho. The respiration rose only to 30, pulse 80. The excitation of the respiration was sooner quieted and he felt generally better, he breathed easier, and he could smoke during ascension, which was impossible on the first day. On the third day, when he took no Quebracho, the manifestations were exactly those of the first day. He experimented with the same happy result on a somewhat corpulent gentleman and nervous lady, both of whom suffered from dyspnœa when walking somewhat rapidly on even ground."—*B. M. W., 52, 1879.*

Commenting on the above, Dr. Lilienthal says:—"The action of Quebracho reminds one of Erythroxylon Coca and Eucalyptus Globulus. It is well known that Coca leaves are also used by South American mountaineers in order to stand the fatigue of travelling—that it satisfies the hungry and strengthens the weak. Allen, in his Encyclopædia, Vol. III., page 380, shows us clearly the symptoms of dyspnœa produced by it; pulse increased from 70 to 134. The smoking as well as the internal use of the Eucalyptus has been recommended in chronic bronchitis, asthma (especially cardiac and aneurismal), and in advanced stages of ordinary severe cold. We would recommend a thorough and exhaustive proving of these three drugs, so that we may know how to differentiate between them."

Hypericum.—"Stephen F. D., age about 65, nervous temperament, came under my treatment for asthma, in the summer of '77,

after he had tried various treatments and many patent medicines which were recommended, without being more than temporarily relieved. Was suffering with nightly paroxysms, much reduced in flesh and strength, could walk but a short distance. His history was as follows: Occupation, carpenter and builder; has been a strong healthy man able to endure hard work up to three years prior to his coming to me, when he suffered from a severe attack of pneumonia. From this attack he dated his asthmatic difficulty. His symptoms were: Headache commencing in the nape of the neck, comes forward over the eyes; worse over the left eye; hot applications relieve. Pain in the eye-balls with dimness of vision. Sensation as of a cavity at root of nose, dropping of clear water from nose, at times a thick white discharge. Smarting tickling sensations in throat extending to the lungs on coughing; cold washing relieves. Expectorates much whitish mucus, mucus tastes like lard or tallow. At times much difficulty in raising mucus. Dry wheezing cough. Eating sugar aggravates; some pickles relieve it. Cough worse after midnight. Sensation of faintness and a weak feeling in the lungs. Great difficulty in breathing; can inspire but can't expire readily. Nausea, cyanosis, profuse warm sweat, palpitation of the heart; has to have the doors and windows open; breathing and pulse rapid. At times is relieved by retching wind. Sharp stitching pain in both sides. Very restless during the attack, throws his head from side to side. Sensation as if a handkerchief were tied tightly about his neck.

Usually the attacks are much worse before a storm; damp south winds aggravate the condition. The cough which he has constantly is worse when exposed to the heat of the sun. Appetite poor. Good digestion. Action of bowels and kidneys normal; no mental depressions. Suffers much from cold feet and knees.

He was placed upon *Ars. cm.* for two weeks with some benefit. Then Ars. 3 x trit. was given with no improvement. *Lach.* 3 *x* was next used with a considerable amelioration of his paroxysms. *Carbo veg.* was also used. The case not improving as I desired, again his history was investigated thoroughly, bringing out the fact that just before he had the attack of pneumonia, he fell from a building, and when picked up was lying with the back of his neck across a joist. He remembered that for a long time much pain and

tenderness was experienced in the cervical region. The history of the fall led me to think that possibly the asthmatic trouble was the result of spinal concussion. Hering gives this symptom for *Hypericum:* "Spasmodic asthmatic attacks with changes of the weather from clear to damp or before storms, after lesions of the spinal cord by a fall years before." *Hypericum 2 x* was given for four weeks with a rapid general improvement. The asthmatic paroxysms came less frequently and light. His general health improved. Up to the present time (over two years) there has been no relapse. He works nearly every day, and experiences no difficulty in going about as he pleases."—*Dr. F. W. Adriance.*

Arsenicum.—"On May 12th, 1880, Mrs. B—— came to me, saying that she was perfectly well excepting a severe cough. Two and one-half years ago she had a severe fall, injuring the left side. Since that time, after a full inspiration, there has been a gurgling sound, like that of gas, in the left infra-mammary region. This has been constant since about the time of the injury. It was very marked, and could be heard at some distance from the patient. There was labored respiration, the vocal fremitus and percussion sounds were normal and the rhythm irregular. Sibilant râles were heard all over the chest. Mrs. B—— caught cold last September, and the asthmatic cough began in November. The expectoration was yellow and stringy. The cough was aggravated by exercise and talking. She usually coughed in paroxysms, with red face and a desire to "catch the breath." After severe coughing there was a feeling as of pressure in the abdomen, and a desire to void urine.—Diagnosis: Spasmodic asthma, with an abnormal condition (possibly that of constricted bronchia) in part, of the lower lobe of the left lung from traumatic causes.

Remedy: Arsenicum, sixth, six globules (No. 35) every three hours.

May 19th, 1880, Mrs. B—— said that she was very much better. Improvement began immediately. The coughing at night, which had kept her awake, first disappeared. For the past three days she had coughed very seldom, and then not spasmodically. The "gurgle" in the side, and the desire to void urine after coughing, had been absent for the past five days. Arsenicum thirtieth,

six pellets (No. 35) were prescribed every six hours, and the patient told to come again if not cured.

About September 1st I met her, and she told me that she had been well since about the time of her calling upon me at my office." —*Dr. W. A. Allen.*

4.—HAY-FEVER.

CATARRHUS ÆSTIVUS; SUMMER CATARRH.

Hay fever, variously called summer bronchitis, hay asthma, autumnal catarrh and rose cold, is a neurosis, appearing annually during the summer and fall months, affecting only susceptible individuals, and assuming the form of catarrh, or catarrhal fever. The name hay-fever, by which it is most generally known, was first applied to it in England, the disease prevailing there during harvest or hay-making time. As already stated, it affects by preference certain susceptible individuals, whose idiosyncrasy, or constitutional predisposition to the disease, renders it an annual visitant. Not less strange is the fact, that after the appearance of frost, these individuals become at once convalescent, and remain so until the following season.

SYMPTOMS.—The disease manifests itself in the form of an inflammatory irritation, or sub-acute catarrh, of the mucous membrane of the eyes, nose and respiratory passages; and is characterized by chilliness, aching, fever, redness and suffusion of the eyes, with itching of the lids and inner canthi, violent paroxysms of sneezing, copious watery discharges from both the anterior and posterior nares, generally of an acrid, salty taste, redness and rawness of the nose, flushed face, dyspnœa, with the sense of weight and constriction of the chest, pressure and heaviness in the forehead, pricking and itching sensations, burning in the lungs, deprivation more or less complete of the senses of taste and smell, together with such a degree of physical and mental depression as to render the patient unfit for continuous mental effort, or for the transaction of business.

ETIOLOGY AND PATHOLOGY.—As before stated, the disease occurs only at a particular season of the year, when the atmosphere is filled with vegetable emanations; and it affects only a comparatively

small portion of the population, namely, the few who are eminently susceptible to the irritating effects of such emanations; hence experience shows that the most effective treatment is a removal, during the season of exposure, to a purer atmosphere, such as is found at the sea-shore and in the mountain regions, where the atmosphere is free from all such irritating substances. The inference, therefore, is, that vegetable effluvia are the cause of the disease. Indeed, some go so far as to assert, that the special irritant is the pollen of the *Ambrosia artemisiafolia*, commonly known as hogweed. Dr. Morse, by exposing microscopical slides, moistened with glycerine, to the open air, found that they became thickly studded with the pollen of this particular plant, even in the city. Dr. Bensed, however, who, by means of circular letters addressed to both physicians and laymen throughout the country, obtained the details of several hundred cases, comes to the following conclusions:

"1. Hay-fever is essentially a neurosis—that is, a functional disease of the nervous system.

2. The disease is not due, as has been supposed, to any single specific cause, either animal or vegetable.

3. All forms of the disease in all countries, whether occurring in the spring, summer or autumn, and variously known as "rose cold," "peach cold," "June cold," "hay-fever," "hay-asthma," "ragweed fever," and "autumnal catarrh," are but manifestations of one disease, for which the most appropriate name is "summer catarrh.

According to Blackley, Zuelzer, Phœbus, Wyman, and others, age and hereditary predisposition have as much influence in its production as atmospheric influences, and perhaps more. Neither the very young nor the very old appear to be affected by it. These authorities assert that the disease only attacks persons under forty years of age. This, however, is not strictly true, as we sometimes meet with individuals of a more advanced age, like Henry Ward Beecher, who are subject to it. A more important fact, in this connection is, that the tendency to the disease is transmissible from parents to offspring. It is strictly confined to civilized life, and almost exclusively to those possessing the "nervous diathesis." Moreover, the disease is found to be greatly aggravated by mental influences, especially such as tend to depress or exhaust the nervous system. Hence it appears, the disease is, to a great extent, one of

constitutional origin, and not, as is generally supposed, one exclusively local in its nature. It follows, therefore, that vegetable emanations, heat, dust, and the like, are not to be regarded as the sole cause of the affection, but simply as excitants of a disordered condition of the system, occurring in organizations predisposed to the disease.

It is proper to add, that the distinguished physiologist, Helmholtz, as far back as the year 1868, claimed to have discovered in the nasal secretions of persons subject to this disorder, certain low vegetable parasites (*vibriones*) to which he referred the origin of the disease. This discovery was afterward said to have been confirmed by Dr. Frickhoefer, of Schwolback, Prof. Busch, of Brun, and others. On the other hand, other microscopists, of equal reputation, have failed to substantiate the discovery, even with high magnifying powers. The presence of "vibriones" in the secretions of hay-fever patients, is therefore no longer regarded as essential to the disease, or an important factor in its production.

TREATMENT.—No doubt the most speedy and substantial relief is to be obtained by avoiding all exposure to the exciting cause—in other words by a prompt change to a more salubrious atmosphere. Fortunately there are many places in this country where neither ambrosia pollen, nor any other excitant of the disease, exists. Such is the character of the entire White Mountain region in the east, the Rocky Mountain country in the west, the shores of Lake Superior, Lake Chautauqua in New York, Put-in-Bay, Fire Island, nine miles off the coast of Long Island, the island of Mackinaw, Colorado Springs, Col., the summits of the Alleghaneys, the Adirondacks, and other elevated regions. Where, however, the patient is obliged to remain at home, and therefore subject to the continued influence of the exciting cause, some relief may be obtained by moistening the nares with a weak solution of quinine, or by inhaling a spray of the same solution. Inhalations of carbolic acid, kreosote, camphor, etc., are also highly recommended. Other adjuvants will be given under the head of Auxiliary Treatment (q. v.).

But, as we have seen, the disease is, to a great extent, of constitutional origin. Accordingly, experience shows that a prescription based upon the *totality of the symptoms* will meet the exi-

gencies of the case here as well as in any other disease in which the cause continues to operate; and although a lasting cure cannot, for obvious reasons, be effected in this manner, the patient may be brought into such a condition as to enable him not only to enjoy a tolerable degree of comfort, but to attend personally to his business affairs.

THERAPEUTIC INDICATIONS.—*Aconite.*—This is the chief remedy at the outset of the disease, when attended with chilliness and heat, great restlessness and nervousness, creeping chills, coryza of a profuse watery character, aching, etc.

Arum triphyllum.—Sneezing, with sensation as if he had taken cold; chilliness; great heat in the face and head; fluent coryza, with watery discharge from the nose; soreness of the nostrils; burning and constriction in the throat; soreness and burning pain in the lungs, especially when coughing; smarting of the eyes, with aversion to light; frequent tickling cough, with mucous expectoration.

Arsenicum.—Asthmatic oppression of the chest, with great dyspnœa; general and extreme prostration; burning thirst, which the patient vainly tries to allay with small drinks of water; cough; coldness of the surface, which is either blue or pale; melancholy, with great mental depression.

Belladonna.—Restlessness at night, with cough, headache, soreness of the throat, great flushing of the face, burning of the nares, and congestion of the head and chest.

Ipecacuanha.—Vomiting, chilliness increased by external warmth, dyspnœa with great tightness of the chest, and choking, asthmatic cough.

Kali iodatum.—Violent, suffocative cough, hoarseness, rawness and burning in the nasal and respiratory passages, profuse, stringy expectoration, general aching, headache, with heaviness in the forehead.

Lachesis.—Tickling, irritative cough, as from a hair in the throat; coryza, with redness of the eyes and nose; oppression, with feeling of constriction in the chest; great dyspnœa, with pain in the lungs and protrusion of the eyes.

Tartar emetic.—Loose, rattling cough, with little or no expectoration; nausea, with biliousness; general aching in the limbs and joints.

Teucrium.—Eyes red, as from weeping, with smarting in the canthi and redness of the conjunctiva; redness and puffiness of the upper lids; profuse smarting tears in the open air; itching in the nose; stinging pain in the upper part of the nasal cavity; frequent sneezing, with tingling in the nose, followed by coryza; sensation of partial obstruction in the nostrils.

Many other remedies have been recommended, the principal of which are:—Bryonia, Gelsemium, Carbolic acid, China, Nux vom., Mercurius protoiod., Pulsatilla, Phosphorus, Sabadilla, Iodide of Arsenic, Sticta.

Auxiliary Treatment.—The disease being essentially a neurosis, we should expect great relief to follow the use of electricity. We have often found this to be the case, especially in the form of galvanism. The continuous current, applied to the chest and spine, seems to soothe the sentient nerves, relieves the dyspnœa, and speedily renders the patient much more comfortable. The same is true of the Turkish bath, of the beneficial effects of which we have the strongest testimony, from those who have given it a long and satisfactory trial.

Dr. Alling says that a patient of his, "a man of nervous sanguine temperament, whose case he always considered the most severe of all that came under his observation, remained at home during the last season, and passed the time in a room where the only air admitted had to pass through strips of muslin fastened before the open window and which were constantly saturated with water. He was entirely free from the disease so long as he remained in his prison, and although he ventured out during the night and on rainy days when the air was comparatively free from the pollen cells, passed the season very comfortably and without the least symptom of asthma. He is quite satisfied that it will not be necessary to go from home hereafter to escape the attack."

Clinical Observations.—*Arum triphyllum.*—Dr. Allen records the following cases:—"Miss H. P., has suffered from an annual attack, which makes its appearance with distressing regularity about August 20th, lasting six or seven weeks. No relief, not even temporary, from anything until the first of October. Great aversion to light, either gaslight or sunlight; wants to be out doors in open air, unless the sun shines very brightly; great desire to walk; sight

dim, cloudy, obscured, was compelled to get glasses to enable her to read, but without avail; nose obstructed, compelled to breathe through the mouth; profuse fluent coryza; constant sneezing; nose watery but obstructed; must have head elevated in order to sleep; lungs feel sore, and tickling cough in trachea caused by much mucus.

Arum triph.^{10,000}, afforded prompt and grateful relief, never before experienced.

Mr. McG., who has been a great sufferer for many years, was preparing for his annual hegira, when he was asked to try homœopathic medicine.

Arum ^{6}, and afterward ^{30} has enabled him to attend to his ordinary business, and forego his usual banishment."

A writer in the *Med. Jour.* says:—"That *Arum mac.* ^{30} I got of you, shut off one case of hay-fever in three or four days, and the patient *keeps well.*"

Dr. Alling says:—"I have seen the best results from the use of *Ars. alb.*, *Nux vom.*, *China* and *Sticta pul.*; but when the asthmatic symptoms are severe, preventing the patient from lying down and sleeping, I employ *Chlor. hydr.*, *q. s.*, to ensure quiet sleep. One or two doses prove quite enough for the night, and the effects of the remedy are far less objectionable than loss of sleep and want of proper oxygenization, which result from the disturbed respiration.

Sabadilla.—The following is taken from the *Hom. News*, April, 1880.—"Burning and stinging for three or four years in the bridge of the nose with a full, distended feeling; complete obstruction so he could only breathe with his mouth open. Much sneezing with profuse discharge of bland, watery, very thin mucus; persistent, almost voluptuous itching and tingling of the alæ nasi at their junction with lips. Sneezing, much worse indoors than out. Nose swollen, red and ludicrous to see. Eyes watery and weak. *Sabadilla* ^{200} cured."

5—INFLUENZA.

CATARRHUS EPIDEMICUS; GRIPPE.

Influenza may be regarded as an epidemic catarrh, arising from some unknown atmospheric influence. Though chiefly a catarrhal

affection, the disease is not confined to the mucous membrane of the air-passages, but often implicates other tissues. In its most severe form, it seems to fall almost simultaneously upon the population of entire districts, traveling rapidly, and decimating the inhabitants wherever it goes. A quarter of a million of people are said to have died of it in London, during the epidemic of 1847; while in Paris nearly one-half the population suffered, and in Geneva not less than one-third. The disease is supposed to travel from east to west; is most severe in low, damp, foggy situations; remains in the same locality several weeks; and is most fatal to tuberculous constitutions, and to those enfeebled by age. The malady is not confined to man, but sometimes affects the lower animals, especially horses, and is then termed *epizootic*. The disease may prevail at any season of the year, and is often associated with other epidemic disorders. Although less extensive and less fatal in its milder forms, the disease always prevails over a large surface of country; early implicates the air-passages, especially the nose, throat and bronchi; and involves to a greater or less degree the whole organism. The nervous system is especially implicated, and is always greatly depressed.

Symptoms.—At the commencement, the symptoms of influenza are usually those of ordinary catarrh, and of course vary with the parts affected. Beginning in the nostrils and frontal sinuses, the disease invades successively the larynx and bronchi; but it is sometimes so mild as to be unattended with fever, or any other marked symptoms. In other instances, it is accompanied by considerable febrile excitement, headache, cough, and oppression of the chest. In addition to these catarrhal symptoms, influenza is generally characterized by debility, pain in the neck, back and limbs, vertigo, and more or less nausea or vomiting. The tongue is usually white and slimy, the sense of taste is greatly impaired, the appetite is lost, the pulse is weak, and the skin, though at first hot and dry, soon becomes moist, and pains and soreness are complained of in various parts of the body, accompanied with debility. Sometimes the debility is much greater than the other symptoms would seem to require; and what is not less remarkable, it often continues after other symptoms have subsided. This early debility is one of the most characteristic symptoms of the disease. The inflammation may invade one or both lungs, greatly endangering the patient's life.

Death frequently takes place during the second week, with symptoms of great exhaustion.

The complications are not confined to the lungs. Sometimes there is inflammation of the brain, the pleura, or the pericardium; at others, dysentery and other complications make their appearance; indeed, it is owing to these complications, for the most part, that influenza is so frequently fatal.

CAUSES.—Although great differences of opinion exist among medical men as to the specific cause of influenza, all are agreed as to its atmospheric origin. By some of the older authors, it was attributed to fogs, which were usually observed to accompany or precede its appearance; by others it was referred to certain electrical conditions of the atmosphere. Some more recent observers believe it to be due to fungi, or other organized bodies, in the atmosphere, too minute for microscopic detection. Those who hold to the germ theory of disease, claim that the air is full of animalculæ, spores or vegetable germs, which irritate the mucous membrane of the air-passages, cause it to shed its epithelium, and after finding access to the blood through the denuded surfaces, so poison the system as to give rise to the morbid phenomena. It must be confessed that the symptoms agree well with such a theory, but at present it can only be received as a mere theory, no sufficient evidence having yet been adduced in its support. The same may be said of the hypothesis of Schönbein, who attributes the disease to the presence of an excess of ozone in the atmosphere. He founds his opinion upon the observed fact, that ozone, when breathed in large quantities, has the effect of irritating the respiratory mucous membrane. Schönbein, while making his experiments, and breathing an excessive quantity of ozone, experienced an asthmatic attack, which compelled him to discontinue his investigations. But the experiments hitherto made with ozone appear to be far from conclusive. Thus, Dr. Leitz, who for a number of years has been experimenting with the atmosphere at Munich, finds that when ozone is most abundant in the air, catarrhal affections are increased. On the other hand, the experiments made by the scientists of Konisburg, in 1878, show that an excess of ozone does not always increase catarrhal affections. Dr. Spangler, who experimented at Roggendorf, says: "Just before an epidemic of influenza no ozone was to be detected. As soon, however, as catarrhal troubles set in and every one was

coughing, ozone was manifested. As the disease gradually diminished, so did the indications of this body decrease." Similar testimony is borne by Dr. Heidenreich, who says: "A strong ozone reaction coincided with an exhibition of pulmonary affections." The experiments made at Hoboken, however, in 1876, show that when ozone was deficient in the atmosphere, catarrhal affections abounded. Nothing conclusive, therefore, can be drawn from such discordant results; and the etiology of influenza must still be regarded as unsettled.

TREATMENT.—Influenza presents itself in different epidemics under such a great variety of forms, as to render it manifestly impossible to lay down any course of treatment which can be regarded as generally reliable. The best that can be done is to indicate the remedies which have proved to be of the greatest practical value in former epidemics. Notwithstanding many of these have been tested by a large and successful experience, they may be required to be abandoned in particular cases, and others substituted in their place. Every epidemic has its peculiar *genus*, and in our search for it, we should not lose sight of the fact, that, as already stated, the complications are often more important and influential than the catarrhal symptoms, in which case the latter should only be regarded as secondary.

The remedies which have hitherto given the best results in this affection, are the following:—Aconite, Arsenicum, Belladonna, Bryonia, Camphor, Carbo veg., Causticum, China, Hyoscyamus, Ipecacuanha, Kali bich. and iod., Mercurius, Nux vom., Phosphorus, Pulsatilla, Rhus tox., Sabadilla, Spigelia, Stramonium, Sulphur, Veratrum alb., and a few others.

CLINICAL OBSERVATIONS.—Bæhr says of *Aconite* in this disease: "Aconitum is particularly suitable to children, in whose case this drug often suffices to effect a cure, whereas, in the case of adults, other remedies may be required in connection with Aconite. It is suitable if the fever has the inflammatory type, or the bronchial affection tends to develope pneumonia, and the patient is tormented by a distressing, violent, dry cough. Aconite will probably never acquire the rank of a specific adapted to a number of cases." The same author says of *Belladonna:* "It acts well in cases with violent congestions about the head and furibund or at least active delirium,

as long as these symptoms have not assumed the characteristic appearance of adynamia."

Hahnemann says of *Camphor:* "In influenza, if the heat has already set in, Camphor only serves as a palliative, but as a valuable one, if given in frequent but more and more attenuated doses; it does not shorten the course of the disease, which is not very much protracted any way, but moderates the vehemence of the attack a great deal, and conducts it, shorn of its danger, to the end." The same distinguished author says of *Nux vom.*, that "a very small dose often removes an attack ot influenza in a few hours."

Hartmann says of *Mercurius:*—"This remedy, of which several doses were given every day, was particularly calculated to cure the disease or even cut it short in its very germ, if the following symptoms prevailed: the head, throat and chest were principally affected; there was a dry and racking cough, which afterwards became loose, and was attended with pleuritic pains; the patient was troubled with profuse sweats, which did not afford him any relief; there were symptoms of an inflammatory fever, dull pain, not very hard pulse. Clotor Müller says of this remedy: "During epidemic influenza a kind of pneumonia occurs which is easily overlooked, because its subjective symptoms differ but little from the symptoms of the prevailing influenza. This form of pneumonia ordinarily sets in without much fever, its symptoms are not very violent, and apparently of not much importance. Common symptoms are: a tearing and aching pain in the head, especially in the forehead, coryza, a slimy mouth and tongue, and dry lips. Among other symptoms we distinguish the following: Loss of appetite, bad taste in the mouth, dry stools, urine mixed with a white mucus, a racking and dry cough, painfulness of the whole thorax, afterwards expectoration of frothy mucus, tearing pains in the joints, disproportionate weakness, tremulous nervousness, aggravation of the symptoms at night, with heat, sleeplessness at night, constant exhalations from the skin, or else copious and fetid sweat. On exploring the chest, we generally discover a not very considerable exudation. If overlooked or neglected, the disease runs a very protracted course, sometimes occasions exhausting pulmonary blenorrhœas, or, if the exudation remains undissolved, phthisicky symptoms may be developed. These peculiar morbid conditions are very much abbreviated by *Mercurius*,

so that a complete restoration of health takes place, and, if the patients otherwise keep comfortably warm, no other remedy is required."

Ruckert, in his "Klinischen Erfahrungen," gives the following indications for *Sabadilla*, which is said to have helped in more than one epidemic of influenza:—"Excessive drowsiness in the day-time; chilliness especially towards evening; shudderings with goose-flesh, the chills creeping up from the feet towards the head; lachrymation, with redness of the eyelids; pressure on the eyes, especially when moving them or when looking up. Headache, especially frontal; sore tongue, thick yellow coating on the tongue, the pain extends as far as the throat; painful deglutition; sensation as if a piece of loose skin were hanging in the throat; bitter taste in the mouth; complete loss of appetite, with nausea; dryness in the mouth without thirst; constipation with flatulence; in some, brown frothy diarrhœa stools which floated on the water; yellowish and turbid urine; cough with vomiting, headache, sharp stitches in the vertex, pain in the region of the stomach; cough of a peculiar, muffled kind; many cough up blood; painful lameness in the joints, especially the knee-joints. All the symptoms get worse in the cold; they exacerbate about noon, but worse towards evening; flashes of heat in the face, with chilliness and coldness of the extremities; the flashes of heat in the face are mingled with chilly creepings over the back, from below upwards, at intervals of ten minutes; the skin is dry as parchment; restless sleep, full of anxious dreams; the cough appears as soon as one lies down."

6.—WHOOPING-COUGH.

PERTUSSIS.

Whooping-cough is an infectious disease, confined for the most part to infancy and childhood, and characterized by a spasmodic or convulsive cough, occurring in paroxysms, and accompanied with a reiterated *whoop*, consisting of short, interrupted expirations, succeeded by one loud, longdrawn inspiration, alternately repeated, and ending with vomiting, or the expectoration of tenacious mucus or phlegm. It is often epidemic, but generally confined to very limited areas, and seldom attacks the same individual the second time. It

is believed to have been unknown to the ancients, as the earliest record of it we have is by Merzeray, of France, in 1414.

Symptoms.—The disease may be divided into three stages, the *forming*, or catarrhal, the *convulsive*, or spasmodic, and the *declining*. The first stage begins with the ordinary symptoms of catarrh, such as sneezing, redness and suffusion of the eyes, more or less restlessness and fever, and a cough, which at first is dry, but after the first day or two is attended with an abnormal secretion of mucus from the lining membrane of the nose and bronchi. Sometimes the fever is intense, with a rapid pulse, violent thirst, frequent and painful cough, and great general distress. On the other hand, in some few cases, the premonitory or catarrhal stage seems to be entirely wanting, the child being seized at once with the characteristic convulsive cough of the second stage. Sometimes, however, though very rarely, the disease never takes on any other form than the catarrhal, unless it be that it has somewhat more of a paroxysmal character.

After the lapse of ten, twelve or fourteen days, the disease enters upon its *second stage*, in which the symptoms already enumerated subside, the fever and coryza diminish, and the appetite, which before was almost or entirely lost, returns; the cough alone remains, and even becomes aggravated, taking on the spasmodic or convulsive character peculiar to the present stage. Instead of being a simple cough, the paroxysm is prolonged, and accompanied with a *kink* or *whoop*, which gives name to the disease. When the second stage is fully established, the convulsive expirations are so violent and broken, and are repeated in such rapid succession, that the patient frequently appears on the eve of suffocation. During the paroxysm, the neck and face are livid and swollen, and the eyes protrude and overflow with tears; at length one or two violent inspirations occur, producing the characteristic *whoop*, to be followed soon after by another fit of coughing and another whoop, until finally a discharge of mucus from the lungs, or vomiting, sets in, and puts an end to the paroxysm.

These fits of coughing generally recur at intervals varying from five or ten minutes to half an hour or more, and last from one or two to ten or fifteen minutes, being commonly somewhat less frequent at night than during the day. The child is almost always

conscious of the approach of the cough, and when the attempt to suppress it becomes ineffectual, either runs to its parent, or seizes any object within its reach, in order as it were to furnish a *point-d'appui* for the muscles concerned in overcoming the obstruction to respiration during the paroxysm. Sometimes the congestion thus caused is so great as to give rise to more or less bleeding from the nose and mouth, ecchymosis beneath the conjunctiva, and, in some rare instances, even an apoplectic state of the brain. Generally, however, the child quickly recovers from the exhaustion produced by the coughing, resuming its sports, and even calling for food. On the other hand, if the attack be very severe and protracted, the child will often waste away, becoming pale, thin and weak.

In this stage of the disease, the expectoration, which at first was thin and frothy, becomes thicker and more tenacious, and is sometimes so viscid as scarcely to admit of being expectorated. When less tenacious and profuse the paroxysms are of course lighter and shorter than when very ropy and adherent. In the latter case, frequent efforts are made to get rid of it by coughing, the accumulation of mucus in the bronchi constituting the chief exciting cause of the return of the paroxysm.

The *third* or declining stage of whooping-cough, is marked by a general amelioration of all the symptoms. The paroxysms become less frequent and severe, the appetite improves, the sleep becomes tranquil and easy, vomiting is allayed, and the child rapidly recovers its flesh, strength and spirits. Sometimes, however, it assumes more or less of a chronic form, the improvement being only partial, and the cough continuing in a milder form for an indefinite period. In these cases the disease is apt to assume an intermittent type, the paroxysms returning at a given hour every day, and continuing obstinately for many months. The ordinary duration of the disease is from four to five months, the catarrhal stage embracing the first twelve or fourteen days, the convulsive stage about six or eight weeks, and the declining stage about a month.

Complications.—The above description of whooping-cough applies to the disease in its simple form; but experience shows that it seldom runs its entire course without becoming complicated with some other disorder. Indeed, the mortality by this disease is generally due to some of its many complications, the principal of which

are:—*infantile remittent*, above noticed, *bronchitis*, *pneumonia*, *cerebral congestion*, *hydrocephalus*, *apoplexy*, and *convulsions*. The setting in of these complications, which generally occur during the second stage, or when the disease is fully developed, is announced by the symptoms peculiar to each affection, those of an inflammatory character being marked by a return of fever, loss of appetite, difficult and hurried breathing, increased violence of the cough, and other characteristic symptoms. The practitioner, therefore, will need to be well on his guard, and very watchful, lest at the very moment of recovery some fatal complication supervene. This is especially necessary in infantile cases, in which the vital power is feeble and easily extinguished—very young infants frequently falling victims to the disease.

Pathology.—While it is generally conceded that whooping-cough owes its origin to a specific blood-poison, acting on the nervous system and the mucous membrane of the air-passages, great diversity of opinion exists as to the manner of its production, some referring the disease to inflammation, either simple or specific, of the bronchial and pulmonary mucous membrane, and others to irritation of some portion of the nervous system. The generally received opinion is that of Rilliet and Barthez, viz., that the peculiarity of the cough and whoop are due to the irritation of the branches of the pneumogastric nerve, caused by the enlargement which takes place in the absorbent glands at the roots of the lungs. It is proper, however, to add, that when this theory was under discussion in the French Acad. of Med., strenuous objections were presented to it, the principal of which were—1st, that the glands are seldom found enlarged; 2d, rapid amelioration frequently follows change of air; 3d, the symptoms intermit; and, 4th, the disease is contagious. (*Gaz. Hebdomadaire.*)

Dr. Hamilton and others adopt the theory of Letzerich, who, as far back as 1871, made microscopic examinations of the expectorated mucus, and also portions of the phlegm, and found mycelium and spores of fungi. The theory is, that whooping-cough is the direct result of fungoid growth, and that the spores thrown out by coughing cause the disease to be taken by those standing near. Letzerich says: Diseases produced by the vegetation of fungi in the ephithelium stratum of the respiratory organs are of two kinds.

First: Diphtheria originates at the head of the wind-pipe and trachea, seizes and destroys the ephithelium with startling rapidity. Second: Whooping-cough. The fungus germinates in the ephithelium web, produced whooping-cough and its manifest complications.

Etiology.—Pertussis is generally caused by epidemic influence, but being of an infectious nature, it is also frequently propagated by contagion. Though generally occurring epidemically it is sometimes sporadic. It affects all ages and conditions of life, but like scarlatina and measles, is chiefly confined to early childhood. It prevails in every climate and at every season of the year; and, like other contagious diseases, it seldom attacks the same person more than once. Being transmissible by *fomites* (*Aitken*), the disease is communicable by means of towels and articles of clothing, as well as by direct contact with the patient—a fact of great importance so far as prophylaxis is concerned.

Prognosis.—In uncomplicated cases of this disease there is generally but little danger to be apprehended; even young infants, if healthy and well cared for, commonly recover. On the other hand, when the disease attacks very young and delicate children, or when it prevails epidemically, especially when local complications exist, or when there is a previous disease or a broken down state of the system to contend with, whooping-cough proves exceedingly fatal.

Diagnosis.—During the first stage there is generally nothing but the catarrhal condition and persistent cough, unless, perhaps, it be the character of the prevailing epidemic, to excite suspicion of the disease; but when the convulsive stage sets in, the cough becomes characteristic, and there is no longer any room for doubt. Very young infants, however, seldom whoop at any stage of the disease. In these cases, as M. Constant remarks, the expectoration becomes an important element in the diagnosis, since it is only in this affection that it is then found to occur.

SYNOPSIS OF TREATMENT.

I. Stages:

1. *Catarrhal Stage.*—Acon., Bell., Cocc., Dulc., Ipec., Kali iodat., Nux vom., Puls. (See previous Sections, particularly *Cough* and *Coryza.*)

2. *Convulsive Stage.*—Amm. brom., Bell., Castina, Chelid. m., Cupr., Dros., Lob., Sang.

3. *Declining Stage.*—Arn., Carb. veg., Dulc., Hepar., Puls., Sulph.

II. PROTRACTED OR CHRONIC:

1. *From General Dibility.*—Ars., Calc., Carb. veg., China, Ferr., Nit. ac., Sulph.

2. *From Nervous Susceptibility.*—Bry., Caust., Igna., Lyc., Nux vom., Zinc.

III. PRINCIPAL COMPLICATIONS:

1. *With Convulsions.*—Acid. hydro-cyan., Bell.,Cham.,Cina., Lob., Nat. m., Coffee,Cup., Nux vom., Op.

2. *With Gastric Symptoms.*—Ant. tart., Ipec., Lob., Nux vom., Puls., Sang.

3. *With Intermittent Symptoms.*—Arn., Ars., Bry., Calc., Cina, Nat. m., Nux vom., Puls.

4. *With Bronchitis and Pneumonia.*—Acon., Ant. tart., Bell., Bry., Cham., Hyos., Merc., Phos., Puls., Rhus, Sulph.

5. *With Hpdrocephalus.*—Acon., Bell., Bry., Camph., Canth., Cina, Glono., Hyos., Merc., Opi., Simar.

6. *With Apoplexy.*—Arn., Bell., Bary., Cocc., Lach., Laur., Merc., Nux vom., Opi., Puls., Stram., Zinc.

THERAPEUTIC INDICATIONS.

Aconitum—Sharp, dry, catarrhal cough, particularly at night; dry cough, with heat, thirst and great restlessness.

Specially adapted to the first or catarrhal stage, or whenever there is much fever.

Arnica.—Dry, painful cough, induced or followed by crying and lamentations.

Particularly applicable to the declining stage.

Belladonna.—Spasmodic cough, attended with great cerebral congestion, bleeding at the nose and mouth,suffusion or ecchymosis of the eyes, great oppression of breathing, and convulsions.

This remedy is invaluable in pertussis, not so much by its power to control spasmodic action, as by its power to ward off and to lessen both congestion and inflammation,especially those of a cerebral and pulmonary character.

Carbo veg.—Convulsive cough, particularly in the first part of the night, with sore throat, burning in the throat and chest, shooting pains in the head, red and watery eyes, and vomiting.

Particularly adapted to the latter part of the first, and commencement of the second stage; also when there is great exhaustion.

Chelidonium.—"Great tension over the neck, and in the throat, above the larynx, as if the parts were constricted."

This remedy may be used to advantage whenever there is a sensation of choking or strangulation. Highly useful in certain epidemics.

Cina.—Paroxysms attended with rigidity, and followed by a clucking or gurgling sound in the throat; also, when there is paleness of the face, or faintness, and especially when there are verminous symptoms, such as bloating, griping, itching of the nose and anus, etc.

Corallium.—Painful, spasmodic cough, with expectoration, and with great congestion of blood in the head and face.

This remedy is particularly adapted to the second or convulsive stage of whooping-cough, but as it seems to antidote the "materies morbi," it may be advantageously given at an earlier period.

Cuprum.—Frequent convulsive paroxysms of coughing, with lividity of the face, and followed by rattling of mucus in the chest, vomiting, and trembling of the limbs; also, when attended by rigidity, suspended respiration, and insensibility.

Drosera.—Violent paroxysms of coughing, either with or without fever, shuddering, warm perspiration, particularly at night; cough worse at night, or during repose, and ameliorated by movement.

Hepar Sulph.—Dry, rough, hollow cough, burning of the face, hands and feet, disposition to vomit after the paroxysms, weeping mood, emaciation.

This remedy is more especially indicated in the declining stage, or when there is a tendency for the disease to become chronic.

Ipecacuanha—Anxious, suffocative cough,with blue face, vomiting of slimy mucus, and rattling in the throat and chest.

Specially adapted to cases complicated with gastric disturbance.

Lobelia.—Convulsive paroxysms, with pains in the chest,tightness of breathing, and sensation of fullness or choking in the throat.

Mercurius.—Convulsive paroxysms, with bleeding at the nose and mouth, vomiting, restlessness, nightly perspiration, burning in the larynx and trachea.

Mercurius is also adapted to cases complicated with verminous symptoms, either after or in alternation with *Cina*.

Nux vom.—Dry, hard, choking cough coming on after midnight, or in the morning, and accompanied with bleeding at the nose and mouth, vomiting, blueness of the face, constipation.

Pulsatilla.—Loose, hoarse cough, with vomiting; scanty mucous or purulent expectoration, slimy diarrhœa, loss of appetite, putrid taste in the mouth, worse towards evening.

Pulsatilla is eminently adapted to cases attended with gastric derangements.

Sanguinaria.—Severe, tormenting cough, with coryza, sensation of swelling in the larynx, redness of the face, and expectoration of thick mucus.

This remedy is highly useful in many cases for the catarrhal symptoms; also for bronchial and pulmonary complications.

Veratrum alb.—Convulsive cough, with constriction of the larynx, rattling of mucus in the chest, anguish about the heart, suffocative breathing; fever, thirst, blueness of the face and lips, involuntary emission of urine while coughing, anxious expression of the countenance, protrusion of the eyes, cold perspirations, extreme weakness and prostration.

This remedy is particularly adapted to the second and third stages, especially when the child is very weak, and the remedies above-mentioned have proved insufficient.

Clinical Observations.—*Chelidonium maj.*—Dr. E. Burdick says: "There is one remedy which I have used with entire success in hundreds of cases, either cutting the disease suddenly short or ameliorating the severity of the attack—namely, *Chelidonium majus*. I have had, in a few cases, to resort to Cuprum after the Chelidon."

Corallium rub.—Dr. Lodge Sen'r says of this remedy: "Some physicians rely almost exclusively upon this agent in pertussis and they never have patients in hand for months. We have known cases to be taken in the fall of the year and early winter, under most unfavorable circumstances (in orphan asylums and poor houses), and cured within a month. The Corallium r. was recommended by Teste in the 30th. dilution, but we have had the best success with the third trituration, (five grs. of the third trituration to half a pint

of water, taken in divided doses each day.) In a few instances Aconite and Phosphorus have been used, both in commencement and close, but for the characteristic spasmodic cough, Corallium has been the reliance, and the success has been most gratifying."

Picrate of Ammonia.—Dr. Hale, who uses the tincture for adults and the 1 x for children, gives this remedy on discs, a delicate lozenge made of albumen and sugar of milk, and will contain about two drops of the liquid. It is said to be very successful.

Dr. Couch says: "The remedies that I have found the most beneficial, in the largest number of cases, are *Cuprum met.* and *Drosera.* I never employ them lower than the 200 attenuation, and rarely exhibit more than two doses a day."

Dr. Teste, who first recommended *Corallia* for whooping-cough, says: "As soon as the amelioration produced by *Corallia* ceases, that is to say, at the end of four or five days at the most, it should be discontinued, and *Chelidonium majus* administered, of the sixth dilution, three doses in twenty-four hours, and continued, unless there is a renewal of the violent spasmodic coughing-fits, or convulsions in little children, or spasms of the glottis (all of which circumstances would call for a return to *Corallia*), until the evident transformation of whooping-cough into simple bronchitis. At this period of the disease, neither *Corallia* nor *Chelid.* should be employed, but *Pulsatilla.*"

Dr. J. C. Kilgour gives his experience as follows: "A little girl, æt. three years, suffering with whooping-cough. I gave her drop doses of *Drosera*, first, and *Corallium rubrum* alternately every four hours, beginning the second week, not having seen her sooner, and continued this one week. The third week after the attack she was taken with convulsions and a great rigidity of the body, and cold sweat with great drowsiness after the paroxysm. I gave *Veratrum alb.* [6] one week, every two hours, and the fourth week I returned to *Drosera* alone, one dose a day, and by the end of the fifth week she was well. The old school physician of this place meantime said that pertussis could not be controlled, but would run its course in from ten to fifteen weeks.

Kali iodatum: A young lady, æt. nineteen: took *Iodide of potassium* in the catarrhal stage of whooping-cough and was en-

tirely well in three weeks, not taking any other remedy and taking it only during the first week."

Dr. Conant says: "A child had a bad attack of whooping-cough, for which many drugs were prescribed ineffectually. One day in response to the question, "Does he raise anything?" the mother said, "*He always raises a little thick, yellowish mucus after a coughing spell*, and he seems to have no control of it, *and it flies right out of his mouth* half way across the room sometimes." He got *Badiaga* [30] twice a day. His cough soon became more moderate and easy, and under *Badiaga* he had a comfortable and speedy passage through pertussis.

Suppressed Whooping-cough:—"This child, seven months old had been suffering with whooping-cough for about a month. It was teething and it had considerable diarrhœa. The weather was intensely hot. I was called to see the child suddenly one day—and found it in a profound stupor. It had not nursed or been nursed for six or eight hours. The diarrhœa was checked, and it had not coughed or whooped or vomited for twelve hours at least. The head was very hot and the pupils closely contracted.

I prescribed for this condition *Cuprum acet.* 3d and *Bryonia* 3d in alternation every half hour. In twenty-four hours the diarrhœa had returned, the child coughed freely, but had not whooped or vomited, and it nursed a little. The pupils were still too much contracted, and it rolled the head a good deal. I thought *Hellebore* was better indicated by all the symptoms than the *Bryonia*, so I alternated that remedy with the *Cuprum acet.* every hour. The next day the brain was entirely relieved, and I left the child on *Cuprum* alone every four hours. A mustard foot bath was also used on the first day.

I have verified abundantly this season the curative power of the *Castana vesca*, or common chestnut, over whooping-cough. I order a drachm of the mother tincture (made from the leaves) to four ounces of simple syrup, and give a teaspoonful three times a day and once sometime about the middle of the night."—*Dr. Holcombe.*

Diet and Regimen.—The diet should be nutritious, but light and digestible, and care should be taken not to overload the stomach. Every thing of an indigestible character should be studiously excluded, especially when there is the least gastric irri-

tation. Demulcent drinks, such as quince-seed tea, gum-arabic water, flaxseed mucilage, etc., are soothing, but require to be used in moderation.

The patient should be frequently taken into the open air, whenever the weather is pleasant; the clothing should be light and warm; and care should be observed to protect the patient from any exposure to damp or cold. Whenever convalescense is retarded, or the general health is greatly impaired, a decided change of air, especially if it be to a purer atmosphere, as from the city to the country, to the sea-side, or to the mountain regions, is highly beneficial, and will frequently put an end to the most obstinate attack.

CHAPTER VII.

APHONIA.

Aphonia is a term derived from the Greek, and is used to denote a loss, more or less complete, of the voice. In most cases the voice is not entirely lost, but only impaired or weakened. Three agents or conditions are essential to the formation of the voice, namely: 1st, the opening of the glottis; 2nd, tension of the vocal cords; and, 3rd, expiration of air. It follows, therefore, that anything interfering with these conditions may give rise to aphonia. Thus, it may be caused by various diseases of the larynx, such as acute and chronic laryngitis, œdema of the glottis, vegetations and other morbid growths within the larynx; by pressure on the larynx caused by tumors, abscesses, etc.; by ulceration of the vocal cords, or pressure exerted on them by false membranes, etc.; by disease or compression of the recurrent or inferior laryngeal nerves, which nerves supply motor power to nearly all the muscles of the larynx; and by irritation reflected from some remote organ, as the uterus or intestines. These various causes give rise to three distinct forms of aphonia, namely: (1) catarrhal aphonia; (2) nervous or hysterical aphonia; and (3) paralytic aphonia.

1.—CATARRHAL APHONIA.

This form of aphonia is noticed in Chapter IV, under the heads of Acute and Chronic Laryngitis (q. v.). It is also met with in the subacute forms of laryngitis, the voice being suppressed or impaired according to the severity of the attack. In these cases the aphonia, even when complete, is but an adventitious symptom, the approximation of the vocal cords being hindered, not so much by thickening of the cords themselves, as by a simple infiltration of the mucous membrane covering the arytenoid commissure. The muscles of the

larynx are more or less congested; and it is probable that their mobility is impaired by a certain amount of infiltration, as well as weakened by the diseased condition of the superimposed membrane. These causes are sufficient to account for the imperfect closure of the glottis and the consequent aphonia. The glottis is not entirely open, but the vocal cords are sufficiently approximated to produce a rushing sound in the expired air, giving rise, when acted upon by the lips, tongue, etc., to an articulate whisper, but not to a sufficient extent to excite their vibration; hence no clear sound is produced. Catarrhal aphonia, therefore, even when complete, is seldom a serious symptom, though well calculated to excite, as it generally does, the apprehensions of the patient. When, however, it is the result of more chronic processes, and especially when there is ulceration of the vocal cords, or even thickening and infiltration, it is of much greater significance, not so much by reason of the changes themselves as of the dyscrasiæ that give rise to them. We shall not dwell any longer on this form of aphonia, as a symptom of catarrhal disease of the larynx, as it has already been sufficiently noticed in Chapter IV. (q. v.)

Catarrhal dysphonia, or simple impairment of the voice, is not always due to congestion or thickening of the laryngeal mucous membrane, nor indeed to any laryngeal affection whatever, as it has been observed in chronic disease of the naso-pharyngeal space alone. Dr. Robinson reports a case of this kind in the January number of the *Amer. Jour. of Med. Sciences* for 1876. In this case, the upper portions of the trunks of the pneumogastric nerves lying adjacent to the pharyngeal walls, were evidently involved in the inflammatory processes accompanying the follicular disease existing in their vicinity. No doubt many cases of dysphonia occurring in naso-pharyngeal catarrh, if thoroughly investigated, would be found to be due to that disease, especially in those cases, not very uncommon, where no structural alterations are discernable in the larynx itself. (*See* Chapter I. Sec. 3.).

Treatment.—In the treatment of these cases, we should never lose sight of the fact, that the aphonia is but a symptom, and often one of the least important symptoms, of the laryngeal or naso-pharyngeal disease, on which it depends. Hence, the cure or amelioration of the latter is, in most cases, essential to the relief of the

former. The treatment of these catarrhal conditions has already been given under their appropriate heads (q. v.).

The remedies most frequently indicated in catarrhal aphonia, in addition to those required for the general disease, are: Ant. crud., Arum dracon. and triph., Arsenicum iod., Eryngium, Gelsemium, Rhus glab., Rumex, Phosphorus, Pulsatilla, Spongia.

Clinical Observations.—The following case is reported by Dr. C. H. Lee: "Lieut. L., age twenty-eight, was in the army for three years; a little while before his term had expired, he was in an engagement, and received a wound from a musket ball in the left lung, near the branching off of the bronchia; the ball lodged in the substance of the lung. As there was no exit, great hemorrhage took place; the surgeon could not extract the ball without great risk of life; the hemorrhage was stopped, and the wound began to heal up. As the wound was closing he began to lose his voice. The wound healed, but his voice was so weak he could not speak above a whisper. I examined his throat and chest and found no abnormal condition, except where the ball lodged there was a somewhat dull and heavy sound like that of hepatization. He had a dry, hacking cough, and constipation. I gave him Bryonia, sixth,night and morning, for two weeks; his cough left him, but the voice was not any better. I did not give him any medicine for another week; he thought he was better in health; bowels still constipated; gave Bryonia, fourth, three times per day; his bowels became regular; his voice could be heard a little. At the end of the week he was entirely cured. He has now a strong, healthy voice; lungs perfectly sound—the ball still remaining in the lung, I suppose imbedded in a cartilaginous substance. He had been under the hands of several physicians for a year.

Iodide of Arsenic.—Hale says of this remedy. "It has been found very beneficial in aphonia when occurring in thin, impoverished persons, in whom some psoric taint manifests itself in the form of a dry, scaly eruption on the skin." I have found it especially useful in cases depending on naso-pharyngeal catarrh of an obstinate and offensive character.

Rhus glabrum.—Dr. Hale says he once had a patron who was subject to attacks, every spring, of laryngeal cough with dyspnœa and almost complete loss of voice. He used with success the tincture of the berries.

Dr. J. M. Rees reports a case of aphonia, "of three months standing, with sore throat during deglutition; posterior surface of pharynx irritated, and in places excoriated; edges of soft palate and uvula red and somewhat swollen, and covered with an eruption of minute red pimples; slight, hacking cough, produced by a tickling in the larynx and upper part of the trachea. Under Carbo veg., Causticum and Mercurius she grew worse; her cough became almost constant; tickling at the root of the tongue; Hyoscyamus and Rhus were given, but gave no relief. Rumex 6th, was then given, and she commenced to improve the day after. On the the third day her cough was much better, and the pharynx looked almost natural. The eruption in the palate had almost disappeared, but there was still some redness on the edges; Rumex 5th, as before. Cured."

2.—HYSTERICAL APHONIA.

NERVOUS OR FUNCTIONAL APHONIA.

Hysterical, or, as it is sometimes called, *functional aphonia*, is that form of aphonia, attended with complete loss of the voice, which, while it assumes the appearance of genuine paralysis, is due to no pathological lesion, but is purely functional in character. In one sense it may be regarded as a true paralysis, inasmuch as the patient is unable to overcome, by the ordinary will-power, the obstacle, whatever it may be, to phonation. Whether, as some assert, the condition is one that the patient is capable of assuming by voluntary effort, will admit of some question; but it is evident that after the condition has once set in, the sufferer loses entire control of the muscles concerned in phonation, and is no longer capable of exercising the powers and functions of voluntary speech. And yet, as in other cases of hysteria, the mind may be so wrought upon by fright, or the will-power so exalted by religious enthusiasm, as to remedy the psychical condition that interferes with the free act of phonation. But such cures, if cures they may be called, are exceptional, and only serve to establish the hysterical nature of the affection.

Diagnosis.—The diagnosis of hysterical aphonia is not generally difficult to make. Aside from the fact that it usually occurs in the hysterical constitution, there is rarely, if ever, any paralysis of

the abductors, abduction of the vocal cords being almost an involuntary act, and occurring only during inspiration. Besides, the respiratory and phonetic movements of the larynx are symmetrical, and hence hysterical or functional paralysis of the vocal cords is always bilateral, and never unilateral, as frequently occurs in genuine paralysis. The condition, however, does resemble somewhat that met with in bilateral paralysis of the abductor muscles of the vocal cords, as described in the next section (q. v.) The vocal cords are not brought into sufficiently close approximation for phonation, but are somewhat abducted, so that the rush of air through the partially-closed glottis, when modified by the action of the lips, tongue, etc., enables the patient to communicate only by a whisper. As this condition of the voice frequently occurs in catarrhal affections, especially in acute, subacute and chronic laryngitis, and may also arise from thickening of the arytenoid cartilages or commissure, or from any other cause capable of hindering the proper closure of the glottis, as well as from double paralysis of the recurrent nerve; it is necessary, in many cases, in order to establish a satisfactory diagnosis, to ascertain by means of the laryngoscope the condition of the laryngeal mucous membrane, the physical condition of the cords, and, in short, the presence or absence of any pathological state capable of giving rise to aphonia. Thus, if the case is one of catarrhal aphonia, there will probably be more or less inflammation of the mucous membrane lining the larynx, together with swelling of the membrane covering the cords, the loss of voice arising simply from the thickening of the vocal cords. Or the arytenoid cartilages or commissure may be so swollen or hypertrophied as to interfere with the requisite closure of the glottis for phonation. Again, if the case is one of paralytic aphonia, resulting from bilateral paralysis of the recurrent laryngeal nerves, all the muscles of the larynx will be completely paralyzed, and the motionless cords will remain in a position neither of extreme abduction or adduction, but midway between the two, or in what is called the cadaveric position. Now this is a position which, although it may be voluntarily assumed, cannot be maintained for any length of time, for, as soon as inspiration takes place, the cords will be seen to separate, and the aperture of the glottis will be perceptibly widened.

Mixed cases sometimes occur, in which, as in the case reported by Simon, there is paralysis of the abductor muscles, giving rise to

great, and in some cases to alarming dyspnœa. But genuine uncomplicated paralysis of the abductor muscles is not accompanied by complete aphonia; in fact the voice is not generally much affected, though it may be slightly hoarse. This will serve to distinguish such cases from hysterical aphonia, however grave the latter may appear to be. Besides, in hysterical aphonia, there is always more or less cough, while in genuine paralysis there is none; the power to cough depending on the ability of the patient to close the glottis. If, however, there should still be any doubt as to the diagnosis, the obscurity may be readily cleared up by administering an anæsthetic; since in hysterical cases there will be, during the stage of excitement, no lack of volubility.

Treatment.—Although there is no real paralysis in these cases, there is, under ordinary circumstances, complete inability on the part of the patient to use her voice, and therefore the paralysis, so far as she is concerned, is genuine, and should be treated as such. Hence, in addition to the removal of any exciting causes, such as cerebral, uterine, or intestinal irritation, such specific and anti-hysterical remedies should be administered as are found to correspond to the totality of the symptoms, by which means the obstacle to phonation, whatever it may be, will be removed, while at the same time the patient's confidence will be secured—a point of no small consequence in such cases.

The remedies which have hitherto given the greatest satisfaction in these cases are:—Anacardium, Belladonna, Causticum, Gelsemium, Ignatia, Lachesis, Lycopodium.

Clinical Observations.—Dr. Hawks reports the following interesting case:—"Miss S., aged 34, came from Sharon, Conn., to consult me for deafness and *loss of speech*. About five years ago was afflicted with neuralgia, chiefly the head, neck and shoulders. Her physicians, unable to relieve her, finally gave her massive doses of *quinine* and morphine. This suppressed (cured, as they said,) the neuralgia, but left her nearly deaf, and at intervals, afflicted with spasms of the throat, sometimes extending to the upper part of the chest, these turns returning sometimes every day or two, and at other times several weeks. I have not seen her in one of them, but suppose they are hysterical, although she does not have her consciousness, nor is there any uterine irritation, nor spinal pain or ten-

derness—they leave her very much exhausted, lasting from thirty to forty minutes, generally recovering towards night, and she always feels worse towards night. About two years after taking the quinine, she had measles, which left her with increased difficulty of hearing. Since then the spasms have continued, *and last October, after a very severe attack, found she could not speak audibly, which has continued up to this time.* Her general health appeared good.

February 27.—Gave Puls. cc. (Lehrmann), one dose, and placebo for balance.

March 4.—No improvement. Lach. cc. 100th, and balance sac. lac.

March 8.—No improvement. Gave Gelsem. 2d dilution, two drops three times a day.

March 13.—Has had a severe spasm and feels discouraged. Directed her to continue Gelseminum.

March 22.—On entering the room she called out in full voice. Thinks her hearing is also better. Continued the Gelseminum.

March 25.—Called to bid me good bye, as she was going home. Both *hearing* and *speaking* natural since. She felt perfectly well, *except* a slight soreness in the throat. The throat showed no redness, but some pain and dryness, but she was subject to such. The voice came *suddenly* on the morning of the 18th, after a refreshing sleep. She felt a glow or thrill of nervous strength, made the attempt and succeeded. The hearing returned gradually.

Miss R., spinster, after a severe paroxysm of hysteria, to which she had long been subject, suddenly lost her voice, and for nearly three years past she has not been able to speak above a whisper. All forms of allopathic treatment, including electricity, have been tried in vain; and the patient and her friends have pretty much given up all hope of her ever recovering the use of her voice. Learning that *fright* was the cause of her last attack of hysteria —her sister having accidentally fallen into a vault—I prescribed *Ignatia*, [80] with the result of her voice being suddenly restored to her just one week afterwards. She says that at the time stated she seemed *impelled* to exert her voice, and it at once came to her. —*Hart.*

3.—PARALYTIC APHONIA.

In paralytic aphonia there is total loss of voice, with absence of dyspnœa, dilatation of the glottis, inaction of the arytenoid and vocal cords, and forcible expiratory efforts during attempts at phonation. The most important and characteristic symptom is the entire absence of dyspnœa, arising from the open state of the glottis, and the absence of any swelling or obstruction to expiration, such as is met with in the nervous forms of catarrhal aphonia. When the paralysis is unilateral, the healthy cord sometimes passes beyond the middle line in the act of phonation, displacing the paralyzed one. The voice is then fine and weak in the lower, and even in the middle notes; while it is altogether lost, or is reduced to a mere squeak, in the higher ones, especially after long exercise. Sometimes there is complete paralysis on one side, and partial paralysis on the other. The voice is then weak, tremulous, deficient in *timbre* and volume, and soon exhausted by exercise, or limited only to a few notes.

Pathology.—According to Prof. Ziemssen, paralytic aphonia depends upon paralysis of the recurrent nerves; but M. Bernard has shown by numerous experiments, that while the recurrent nerves specially influence the vocal muscles, the respiratory muscles of the larynx are under the control of the superior laryngeal nerves; and that paralysis of these nerves, instead of abducting the vocal cords, approximate them, so that every effort at inspiration tends to render the passage more and more difficult, by constricting the laryngeal opening, as we shall see in the next chapter. It appears, therefore, that while paralytic aphonia generally depends upon paralysis of the recurrent or inferior laryngeal nerves, which are the nerves animating all the laryngeal muscles except the crico-thyroid, an impairment of the function of the pneumogastric nerve, or of one of its branches, may, by its interference with respiration, also cause aphonia, as actually happened in a case recorded by Meschede, of Königsberg. (*Berl. Klin. Woch.*, 17, 1878.)

Diagnosis.—The diagnosis of paralytic aphonia is, as a rule, comparatively easy, as in all such cases there is diminished motion of one or both vocal cords, and at the same time an entire absence of catarrhal thickening, or of any other mechanical obstruction to res-

piration. When both crico-arytenoid muscles are paralyzed, there is great dyspnœa, arising from complete closure of the glottis, the laryngoscope showing that, even when the breathing is deep and prolonged, the vocal cords are closely approximated. When only one vocal cord is paralyzed, the voice is fine and weak, deficient in volume, soon exhausted by exercise, and in some cases altogether absent. Whenever the laryngoscope exhibits, during attempts at phonation, an open state of the glottis, together with entire passiveness of the arytenoids and vocal cords, we may be sure, in the absence of any catarrhal symptoms, or other evidences of laryngeal obstruction, that the aphonia is of a paralytic nature.

Prognosis.—In all cases in which there is no incurable peripheral obstacle to phonation, nor any lesion of the nerve-centres, the prognosis may be regarded as favorable. At the same time, we should be careful not to commit ourselves too positively, by predicting a speedy restoration of the voice, since some of the most promising cases have proved incurable. Although the laryngoscope may exhibit no apparent or incurable lesion, the case may nevertheless be so complicated with some degree of organic change in the nervous, muscular or mucous tissues, as to baffle the most approved treatment.

Treatment.—Uncomplicated paralytic aphonia will frequently yield to the stimulating effect of *electricity*, properly applied. In some cases, a single application of the *galvanic current* will suffice to restore the lost function, but in most cases several applications are required. In applying electricity in these cases, it is important to remember that the positive pole is centripetal, and therefore stimulating, while the negative pole is centrifugal and sedative. Consequently, the positive pole is the one suited to paralytic affections. The constant current should be preferred when the affection depends on deficient nervous energy, and the interrupted current (*faradization*) when the muscles have lost their contractile power; the positive pole being placed over the crico-thyroid muscle, and the negative pole over the arytenoid cartilages. The best form of electricity, therefore, for paralysis of the vocal muscles, is the induced or secondary current (*faradization*), though the cure is not always rapid. The operation should be postponed until after the subsidence of any inflammatory action that may happen to exist, and then it should be

repeated daily, the operation lasting only from three to six minutes at a time.

The internal remedies which have proved efficient in this form of paralysis, are: Belladonna, Causticum, Gelseminum, Kali bich., Nitric acid, Phosphorus.

Clinical Observations.—Dr. R. T. Massy reports the following case.—"Mr. S., æt. 31, has lost his voice for the last thirteen weeks, during which he has been under the treatment of an allopathic specialist, who pronounced the case to be one of "paralysis of the vocal cords." When the patient consulted me he could only speak in a whisper. I ordered a Turkish bath, with the following prescription: *Causticum* 2 ^{x}, ounce j.; aqua, drachms viij.: to be used, or rather inhaled, with Dr. Moore's spray-producer, four times a day. His voice was fully restored in two days."

Gelseminum.—Prof. R., music teacher and vocalist, after long use of his voice in training a class for exhibition, suddenly lost it, and was only able to speak in a whisper. A laryngoscopic examination showed that, with the exception of a slightly hyperæmic state of the vocal cords, there was no disease of the mucous membrane of the larynx, but the cords were perfectly motionless, even during forced expiration. As the patient complained also of pain in the neck and base of the brain, I prescribed *Gelseminum* 1 ^{x}, fifteen drops in half a glass of water, of which he was to take one teaspoonful three times a day. His voice returned in full strength on the following day, and continues in full vigor.—*Dr. Thomas Wakefield.*

Faradization.—Dr. Torrance, L. R. C. P., reports the following interesting case:—"Miss A. P., æt. 24, Oct. 1880. Looked delicate but did not complain of weakness. Had had an ulcerated sore throat, and lost her voice on leaving a heated room in Nov. 1875. Recovering from the sore throat, her voice did not return. Consulted several eminent practitioners, but result was the same. Preparatory to my making a laryngoscopic examination, the fact was proved that the loss of function was not due to hysteria, as, placed completely under chloroform, she did not speak, but continued to whisper. The instrument then showed that the vocal cords were in a very relaxed state, and crumpled up as it were near their middle, but otherwise apparently quite healthy. The cords were faradized by McKenzie's electrode, when, after very few applications of the electro-

magnetic current the voice was partly restored, but as a very harsh "croak" at first, and very monotonous. Was asked to sing over a scale of music, but every note was pronounced in the same tone, and she could not modulate her voice either piano or fortissimo. After current had been repeated at gradually lengthening intervals, however, the voice was permanently restored, and now she speaks in a clear and natural tone. She was seen a few weeks ago, and I heard from her own lips that the cure had been permanent.

Remarks.—This patient had previously given everything prescribed for her a fair trial. Tonics and zinc pills were persevered in for a very long time, as well as the inhalation of vapors impregnated with volatile principles. Powders were introduced by insufflation, and this again followed by various escharotics, but without the least benefit until the vocal cords were faradized, which proved there had been no structural disease, but that the case resolved itself into one of functional aphonia or vocal weakness

CHAPTER VIII.

PARALYTIC DYSPNŒA.

PARALYSIS OF THE ABDUCTORS OF THE VOCAL CORDS.

Under the head of Paralytic Aphonia (q. v.), we have had occasion to refer to the extreme dyspnœa which results from paralysis of the crico-arytenoidei postici muscles, the special function of which is that of glottis-openers. These muscles arise from the posterior surface of the cricoid cartilage, and are inserted into the outer angle of the arytenoids. (See Pl. I, Fig. V.) Contraction of these muscles, which takes place during every act of inspiration, causes the arytenoid cartilages to rotate outwardly, thus abducting the vocal cords and opening the glottis. This function resides exclusively in this pair of muscles, the opposing muscles being the crico-arytenoidei laterales, or abductor muscles of the larynx. Hence, any morbid condition interfering with the healthful action of the former, while the latter are in a state of integrity, must result in the closure of the glottis and consequent dyspnœa. It follows, also, that if, under these circumstances, the function of the abductor muscles is entirely abolished, all access of air to the lungs may be cut off, and then death from apnœa will speedily follow, unless the operation of tracheotomy is immediately performed. Although several undoubted cases of this kind had previously been observed, it was not until after the introduction of laryngoscopy that the condition under consideration was satisfactorily explained. Numerous cases have since been reported, in which the paralysis was strictly confined to the abductor muscles, furnishing indisputable evidence of the existence of this rare, but very serious disease.

Symptoms.—The characteristic symptoms are: Intense dyspnœa during inspiration, greatly aggravated by the least exertion, with freedom of expiration, and a normal or almost normal voice.

The larynogoscope shows, that in every act of inspiration, the vocal cords remain nearly approximated, the aperture of the glottis seldom exceeding a line in breadth. In some cases, however, the paralysis is partial, the approximation of the vocal cords during inspiration being confined to their anterior three-fourths, the posterior fourth separating so as to give the aperture of the glottis a larger and triangular form. In other cases, the paralysis is unilateral, only one cord being affected; or one abductor may be more affected than the other; or, finally, the disease may be originally unilateral and afterwards become bilateral. So long as the patient remains perfectly quiet, the breathing may be but slightly obstructed, but the least exertion throws the patient at once into a paroxysm of dyspnœa, accompanied with stridor and other symptoms of laryngeal obstruction. In children the symptoms bear such a close resemblance to those of spasm of the glottis (q. v.), that some authors erroniously consider paralysis to be the essential cause of that disease.

Diagnosis.—As just stated, spasm of the glottis gives rise to symptoms which are liable, at first sight, to be mistaken for those of paralytic dyspnœa. In paralysis, however, the vocal cords are perfectly motionless, whilst in spasm of the glottis they are never entirely at rest, but constantly vary in the degree of separation. Moreover, spasm of the glottis is a comparatively transient condition, and, unlike this affection, is usually absent during sleep. Morbid growths and other conditions, such as anchylosis of the arytenoid cartilages, may so interfere with the separation of the vocal cords as to simulate paralysis, and so also may the hysterical temperament, but closer examination with the laryngoscope will discover in these cases more or less motion of the cords, especially when inspiration is forced.

Causes.—According to Dr. Bosworth, one of the latest writers on the subject, syphilis is responsible for forty per cent. of all cases hitherto reported, thirty in number. The other causes enumerated are: phthisis, localized inflammation, convalesence from typhoid fever, dyphtheria, erysipelas, chronic nicotine poisoning, scrofula, epithelioma and hysteria; in short, the disease appears to be due, chiefly, to acute and chronic blood-poisoning.

Prognosis.—An examination of the reports shows that two-

thirds of the whole number of syphilitic cases had tracheotomy performed, two of them dying a few days afterward from intercurrent causes. All operated upon were compelled to wear the tracheal tube during life. Three out of the four syphilitic patients in whom the operation was not performed, were relieved by medical treatment; the fourth developed no alarming symptoms. The cases so far recorded not amenable to treatment, have been such as have resulted from the slowly-acting blood-poisons, such as syphilis, scrofula, nicotine poisoning, etc.; while those which have resulted in a temporary paralysis and have yielded to treatment, have been due to the more acute blood-poisons, such as those of typhoid fever, diphtheria, etc. (*Bosworth.*)

Pathology.—In several cases reported, degenerative changes have been discovered in the abductor muscles after death, the brain and nerves being perfectly healthy. In Riegel's case, "the posterior crico-arytenoidei muscles were of most striking, almost white, sinewy appearance, showing hardly a trace of muscular tissue, while all the other laryngeal muscles seemed normal. On microscopic examination the former showed much connective tissue lying between the muscular bundles which were still preserved, but which revealed indistinct transverse striations and granular cloudiness." This has led Mackenzie and others to regard the paralysis as myopathic. Bosworth, on the other hand, adopts the view, not that the disease is one of the nerve-trunks, but of the brain. He says: "In three of the autopsies made there was nerve-lesion; in all, muscular atrophy. For reasons already given, the nerve-lesion could not paralyze the abductor muscles without paralyzing the opponent muscles also. We must, therefore, conclude that these nerve-lesions are due to the same cause which, acting on the nerve-centre which presides over the respiratory movements of the larynx, has led to degeneration, and that they have occurred subsequently to it; or that the nerve-lesions occurring first, have reacted upon the nerve-centre, and set in play forces which have acted to produce degenerative changes there; whichever of these hypotheses be the true one, the conclusion is unavoidable that the lesion of the nerve-trunk cannot account for the symptoms of the disease, and that the central origin of the affection should be accepted as the true explanation. Additional evidence in favor of the central origin of the disease, is found in the

obscure brain-symptoms which attended a number of the cases reported, which would seem to point to the existence of some central lesion involving other parts than those which preside over this respiratory function of the glottis." The fact appears to be, however, that some cases are of central and some of peripheral origin. Mackenzie says that in his own experience he has had eight cases of myopathic paralysis, four of which were due to central disease, and four in which the atrophy was due to pressure on the recurrent nerves.

TREATMENT.—In most cases the operation of *tracheotomy* (q. v.) will be necessary to relieve the urgent dyspnœa, and when the case is not one of a syphilitic, catarrhal, or hysterical nature, the the quicker it is performed the better. But if the paralysis is due to any of these causes, and there is no very urgent dyspnœa calling for the immediate opening of the trachea, it will be well to defer the operation until after the effect of the proper medicinal treatment has been ascertained. In case, however, such treatment fails to benefit the breathing within a short time, the operation should be no longer delayed.

In all cases, whether tracheotomy is resorted to or not, *electricity*, both in the form of *faradization* and galvanism, may be tried; but it must be confessed that hitherto this agent appears to have been of but little benefit.

The *medical treatment* is included in the following synopsis:

1. *Syphilitic cases.*—Acid. nit., Kali iod., Mercurius cor., Phytolacca.

2. *Catarrhal cases.*—Ant. tart., Arum dracon. and triph., Hepar sulph., Kali bich. and caust., Phosphorus, Pulsatilla, Spongia.

3. *Hysterical cases.*—Galseminum, Ignatia, Mosch., Cimicif., Asafœd., Valer., Zinc val., Platina.

For other remedies, and for therapeutic indications, see chapter IV.

CLINICAL OBSERVATIONS.—The following cases, taken chiefly from the recent work of Dr. Bosworth on *Dis. of the Throat and Nose*, will serve to illustrate both the character of the disease and its appropriate treatment.

"Von Ziemssen reports the case of a man, æt. 26, who had always enjoyed good health up to New Year's day, 1871, when he was suddenly seized with inspiratory dyspnœa, followed by recurring exacerbations. At first they recurred only at night, but gradually increasing, they appeared during the day, being brought on by any unusual exertion. Seven months after the setting in of the trouble, he was compelled to seek hospital treatment, at which time the laryngoscope showed a motionless state of the vocal cords, with moderate injection of the mucous membrane lining the larynx. The voice was not much impaired, nor were any traces of syphilis to be discovered. He was treated by electricity, and was discharged cured in six weeks."

"Meschede reports the case of a girl, æt. 19, brought to him by her mother, who was affected with complete aphonia of two months' standing. The prominent symptoms, in addition to aphonia, were marked inspiratory dyspnœa, with noisy inspiration at all times, but extreme on slight exertion. Menstruation had ceased for several months, and there was some bloody expectoration, but no signs of lung disease. The laryngoscopic examination, which was made with difficulty, showed paralysis of the abductor muscles of the vocal cords. The unusual co-existence of aphonia, together with the presence of amenorrhœa, etc., led to a suspicion of hysteria, but this view was abandoned on the ground that the close approximation of the cords was a too constant feature of the case. At the same time, it is interesting to note, that under the threats of using the actual cautery, she recovered the use of the voice; but the dyspnœa continued, and finally yielded only to the subcutaneous injection of strychnia. After four months' treatment she was cured."

Dr. Lefferts reports, in the *New York Med. Jour.*, two syphilitic cases cured with *Kali. iod.* One was a robust Irish woman, about forty years of age, who, about five years previous to the attack of paralysis, was affected with mucous patches in the mouth, the disease recurring about six months previous to the attack, in the form of extensive ulceration in the fauces. A few days previous to her visit, she began to suffer with dyspnœa, which was at first slight, and only noticeable at night, after unusual exertion; but gradually it began to show itself during the day also. The voice was unimpaired. The dyspnœa was of the characteristic inspiratory charac-

ter. Laryngoscopic examination showed complete paralysis of the abductors, with a slightly reddened condition of the mucous membrane. She was immediately brought under the influence of iodide of potassium, all evidences of the disease disappearing at the end of six weeks.

The other case was that of a woman, æt. 35, who gave a very clear history of syphilis. In April, 1878, a progressive dyspnœa set in, which resisted all treatment. During the second week paroxysmal attacks of dyspnœa occurred both day and night. Dr. Lefferts first saw her after a very grave and alarming attack, at which time the subjective symptoms were less prominent, but laryngoscopic examination showed complete paralysis of the abductors of the vocal cords, with a hyperæmic condition of the whole mucous lining of the larynx. She was immediately placed under the influence of iodide of potassium with mercury, the subjective symptoms disappeared, and the paralysis effectually overcome.

"Dr. Glynn reports the case of a man, æt. 36, who was admitted to the Royal Infirmary, in Liverpool, suffering from inspiratory dyspnœa, etc., the result of an exposure to cold three weeks before. Examination showed acute inflammation of the lining membrane of the fauces and larynx, with paralysis of the abductor muscles. Medical treatment proving of no avail, tracheotomy was performed. Electricity was afterwards employed with the best results, the tracheal tube being removed in two months with no recurrence of the trouble."

Dr. Blake reports the following case in the *Boston Med. and Surg. Jour.*, August, 1877: "A girl, æt. 6, was brought to him with the following history: Six months before she had scarlet fever and diphtheria of unusual severity, but had made a perfect recovery. A week before he saw her she had a croupy cough, with noisy breathing at night. The voice was unaffected. A yellowish exudation was formed on the tonsils. The symptoms becoming worse, Dr. Knight was called to see her, and on laryngoscopic examination discovered the characteristic appearances of paralysis of the abductors, and advised tracheotomy. This was deferred for a few days, but was finally resorted to when the patient was *in extremis*. The respiration was established, and treatment at the same time was instituted for the deposit which was probably diphtheritic.

At the end of a week the tube was removed and recovery was complete."

Hayes reports a case in the *Dublin Jour. of Med. Science*, January, 1880, of a man aged thirty-one, who came under his care five months previously with the history of inspiratory dyspnœa of two months standing. Eight years before, he had had a chancre. Laryngoscopic examination revealed paralysis of the vocal cords. Under two and a half months' treatment by eleectricity and iodide of potassium, he was cured.

Rehn (*Ziemssen's Cyclopædia, vol. vii*) reports the case of a boy of thirteen, who was attacked, while convalescing from typhoid fever, with inspiratory dyspnœa, which was increased by the slightest exertion. Laryngoscopic examination showed complete paralysis of the abductors of the vocal cords. Tracheotomy was performed, the tube being worn fifteen weeks, and the patient kept on a supporting and general tonic treatment. At the end of this time the tube was removed, the cure being satisfactory.

Dr. Knight, in the *Boston Med. and Surg. Jour.*, September, 1869, reports the following case: "A man, æt. 36, ship-carpenter by trade, had the following history: In 1854 he had a primary sore, followed in six months by an eruption on the skin, and in the years following, up to the time Dr. K. saw him, he had repeated attacks of rheumatism, skin eruptions and sore-throat. In December, 1867, he began to have sore-throat with hoarseness, and to fail in strength. A laryngoscopic examination at the time revealed the chronic laryngitis of syphilis. After treatment for two weeks, he was improving, when he disappeared, and was not seen again until August, 1869, when he presented himself with a tube in the trachea, which had been inserted in March, seven months after he had disappeared, for a progressive dyspnœa. An examination showed paralysis of the abductors. He continued to wear the tube."

Dr. A. H. Smith reports the following case in the *Amer. Jour. of the Med. Sciences*, January, 1878: "F. C., æt. 50, a messenger consulted Dr. S. on Sept. 8, 1877, suffering from an urgent dyspnœa, which had been coming on for two years, but had grown much worse during the previous fortnight. The voice was husky, but otherwise normal. An examination showed the cords motionless in the median line, with a moderate hyperæmia of the mucous lin-

ing of the larynx. The patient gave a clear history of syphilis, contracted ten years before, followed by secondary lesions. Tracheotomy was performed the following day, and the patient was put on the use of full doses of iodide of potassium, and localized faradization was used. The treatment resulted in complete cure of the paralysis at the end of four weeks. The tube causing considerable irritation, it was removed. Six weeks later the disease returned suddenly, and before the operation could be repeated the patient died."

Dr. Bosworth reports the following case: "In May, 1878, I was asked to see a patient in Bellevue Hospital, suffering from urgent dyspnœa. I found the man, a sailor, æt. 40, suffering from the peculiar inspiratory dyspnœa which suggested bilateral paralysis of the abductors. A laryngoscopic examination showed the peculiar motionless condition of the vocal cords, with marked hyperæmia of the mucous membrane. His voice was husky, but not lost. He gave a clear history of having contracted syphilis ten years before. A year before I saw him he had begun to suffer from moderate shortness of breath,with occasional attacks of dyspnœa of an apparently spasmodic character. These attacks recurring with greater frequency and severity, he came to Bellevue, where I saw him the day after admission. I advised tracheotomy, but, the immediate attack soon subsiding, it was not done, and the man left the hospital a few days afterward suffering a mere shortness of breath. A few days subsequently, another paroxysm coming on he was taken to St. Luke's Hospital, where tracheotomy was performed, after which he was subjected to treatment by electricity in connection with the internal administration of iodide of potassium, with an apparent slight improvement, as often occurs in these cases. It was delusive, however, and he subsequently left the hospital with the tube in, and was lost sight of."

CHAPTER IX.

DIPHTHERIA.

The terms *diphtheria* and *diphtheritis* are derived from a Greek word signifying *a skin* or *membrane;* and are used to denote a febrile affection, of a malignant, contagious and putrid character, generally attended with a fibrino-albuminous exudation in the fauces and neighboring parts. The exudation is not confined to the region of the throat, but is sometimes, though rarely, found upon the alimentary and other mucous membranes, the inner surface of the blood vessels, the endocardium, and the abraded skin. This definition, while it excludes all such exudative processes as occur in croup, tonsillitis, etc., embraces cynanche maligna, the putrid sore throat of Fothergill, and all constitutional forms of gangrenous inflammation of the fauces attended with exudation. This distinction is all the more necessary to be made, since the name itself is misleading, the term diphtheria having been applied to almost every form of local disease attended by the formation of a false membrane, whereas the affection under consideration, even in its mildest form, is a constitutional disease of the most malignant nature, and, when fully developed, of the most destructive character.

History.—Diphtheria is really a very old disease; how old, cannot, perhaps, be very accurately determined. Descriptions of the disease have, it is thought, been traced to the era of Hippocrates; and there is no doubt that it is identical with the disease described by Aretæus, under the name of *Malum Egypticum.* Hecker, one of the earliest of modern writers on the subject, gives an account of an epidemic which occurred in Holland, in 1337. In the year 1745, an epidemic of the disease appeared in London, which was described by Dr. Fothergill under the name of *putrid sore throat*, a name by which it is still extensively known. Another epidemic occurred in 1771, and was described by Dr. Bard, of New York. But it was on tuntil the year 1818 that the disease received the name of *Diph-*

theria, which was given to it by Bretonneau of Tours, a distinguished French physician. Bretonneau at first regarded the disease as a purely local affection, ascribing the fetor of the breath and gangrenous state of the fauces to the putrid condition of the false membrane, and referring the constitutional condition to infection propagated from the local disease—views which he afterwards considerably modified. Since Bretonneau's day, the disease has been studied by many eminent scholars, both in this country and in Europe, and although much diversity of opinion still exists as to the real nature of the malady, the majority of pathologists agree in ascribing to the disease the characteristics above mentioned.

Varieties.—Most writers describe three forms or varieties of the disease, namely, the mild or catarrhal, the croupal or simple membranous, and the septic or malignant. These varieties undoubtedly exist, but, like the corresponding grades of scarlatina, they are only varieties, and not distinct forms; the grade in any particular case depending partly upon the constitution of the patient, and partly upon atmospheric and other conditions.

Symptoms.—The appearance of the characteristic exudation is generally preceded by constitutional symptoms of greater or less intensity, among which are loss of appetite, headache, and a sense of chilliness, followed by fever, which in acute cases often becomes excessive. In many cases, however, the initial symptoms are of so mild a character as scarcely to attract attention, there being perhaps little or no soreness of the fauces, nor any marked fever; and unless other cases in the neighborhood lead to the inspection of the throat, the presence of the membranous deposit, especially in children, may be overlooked until the disease has gained considerable headway. As the disease progresses, however, the fever becomes more pronounced, the headache increases, the cheeks acquire a purplish hue, more or less difficulty in swallowing occurs, and in some cases there is nausea and vomiting, together with swelling and tenderness of the cervical and submaxillary glands. For the first two or three days the fever is usually slightly remittent, the aggravation occurring about the hour the fever originally set in. The pulse, though frequent, is not generally strong, and, as in other malignant contagious fevers, there is more or less prostration from the very first. On examining the throat, we may either find a continuous fibrino-

albuminous exudation covering the fauces, tonsils and palate, or else small irregular patches of grayish-white material, which afterwards enlarge until they become continuous. The mucous membrane between and on the borders of the patches presents a diffused redness, the submucous tissues are swollen, and the membranous formations become thicker and more fibrinous, until upon coalescence they frequently envelope the tonsils, the pillars and posterior wall of the pharynx, the uvula, and the soft palate. These patches, which at first are generally of a yellowish and afterwards of a grayish or dirty-white color, frequently become brown or blackish, giving them at times almost the appearance of old leather.

Unless arrested, the diphtheritic membrane may spread into the larynx and nasal cavities, and even into the stomach and bowels. Maxson says he has seen a case in which the entire alimentary mucous membrane cast off, at stool, an exudation measuring nearly a pint, apparently continuous. If the disease invades the nasal cavities, we have, in addition to the symptoms already described, an acrid discharge from the nose, which, at first thin and transparent, gradually becomes brownish, is frequently mixed with bloody mucus, and, like the breath, has an intolerably fetid odor. Occasionally, in these cases, the diphtheritic process extends through the lachrymal ducts to the lining membrane of the lids, causing diphtheritic conjunctivitis. The disease may also extend through the Eustachian tube to the cavity of the tympanum, ending finally in perforation of the membranum tympani and purulent otorrhœa. If the disease extends to the larynx and bronchi, there will be great difficulty of breathing as well as of swallowing, attended with cough and expectoration of detached portions of the exudation, together with more or less unorganized matter of a fluid consistency.

Severe cases are usually attended with delirium, the throat becomes gangrenous, the face and neck swell and become pale or livid, the pulse loses its force and becomes more and more frequent and irregular, the extremities become cold, and the patient dies, generally within a week, either from septicæmia, or from mechanical obstruction to respiration, caused by the extension of the false membrane to the lower air-passages. Sometimes death takes place very early from congestion, or from the direct effect on the nerve-centres of the poison that produces the disease. The paralysis

thus caused, instead of producing sudden death, may, however, be slight, or may be severe and gradually pass off. If the case terminates in recovery, the exudative process is arrested, the membranous deposits are thrown off in masses from the fauces and neighboring parts, the false membranes in the air-passages either liquify and are absorbed, or else are thrown off in the form of casts, the disorganized tissues assume a more healthy appearance, the breath loses its gangrenous odor, the fever gradually subsides, and convalescence, though slow, and extending over several weeks or months, finally becomes fully established. On the other hand, mild cases, unattended with septic poisoning, recover much more rapidly.

Concomitant Symptoms.—1. *Eruption.* The disease may or may not be accompanied by an eruption. The rash usually resembles that of measles, except that it is generally more scattered, especially in adults. In children it is apt to assume more or less of a papulous form, and is sometimes mistaken for the eruption of scarlatina. The rash is not very common, seldom appearing in more than two per cent. of all the cases.

2. *Myalgia* and *rheumatism* are common accompaniments of diphtheria, more especially the former. As a general rule, the more severe the case, or the more typhoid the symptoms, the more common and severe will be the rheumatic pains.

3. *Epistaxis* is another frequent complication, especially in bad cases. It is oftentimes a very troublesome symptom, but will generally yield to the indicated remedy.

4. *Stranguary* is also present in some cases, but is not generally very severe, nor very persistent.

5. *Paralysis*, especially of the muscles of deglutition, is sometimes met with, and in extreme cases there may be paralysis of different parts of the body, caused, no doubt, by the accumulation of poisonous matter in the system. This paralysis, occurring at the commencement or in the course of the disease, should not be confounded with that which frequently occurs during convalescence after severe attacks.

Diagnosis.—The diagnosis of diphtheria, after the false membrane makes its appearance, is not difficult, provided the constitutional

nature of the affection is borne in mind. Oertel and other German authors make no sufficient distinction between this disease, when involving the air-passages, and true croup. The distinction, however, is a broad one, as may be plainly seen from the following differential diagnosis:

Diphtheria.	*Membranous Croup.*
1. Air-passages secondarily affected.	1. Air-passages primarily engaged.
2. The fever and other constitutional symptoms precede the local affection.	2. The fever symptomatic of the local disease.
3. The fever is typhoid.	3. The fever is inflammatory.
4. The affected tissues constantly tend to become gangrenous.	4. This never occurs in true membranous croup.
5. Adults frequently affected.	5. Croup is almost exclusively a disease of childhood.
6. Diphtheria is a contagious, epidemic and malignant disease.	6. Croup is neither contagious nor epidemic.
7. The exudation spreads to the glottis from above downward.	7. The exudation either originates in the larynx or trachea, or spreads from below upwards.
8. The pharynx is diseased.	8. The pharynx is healthy.
9. There is more or less dysphagia, often severe.	9. Dysphagia either absent or very slight.
10. Breath characteristically fetid.	10. Absence of any characteristic odor of the breath.
11. Sequelæ characteristic.	11. No such sequelæ.
12. Septicæmia common.	12. No septicæmia.

Prognosis.—In diphtheria the prognosis is always doubtful. However mild the symptoms may appear, and however protracted the course of the disease, there is always danger that it may suddenly take on a malignant aspect, or that the diphtheritic process may extend to the larynx and bronchia, in which case a fatal issue may be expected. When the temperature rises suddenly during the course of the disease, and the fever assumes a low typhoid form, it is an evidence of general blood-poisoning, and may be expected to result in death.

Nature and Causes.—There cannot be a reasonable doubt that diphtheria is just as much a constitutional or blood disease, as rheumatism, scrofula, variola, or syphilis, since all alike are attended

by characteristic local and constitutional symptoms. Rheumatism is characterized by the appearance of an inflammation of the fibrous or ligamentous structures; scrofula of the glands, bones, etc.; variola of the skin and mucous membrane; syphilis of the skin, mucous membrane and periosteum; and diphtheria of the throat, attended with an exudation of fibrino-albuminous matter. The poisoned condition of the circulating fluid is evidenced during life, 1st, by the dark, grumous appearance of the blood issuing from the affected surfaces when roughly touched; 2d, by the spontaneous hemorrhages that frequently occur; 4th, by the gangrenous condition of the affected tissues; 5th, by the clammy sweats and rapid sinking of the vital powers, without any effort at reaction; and, 6th, by the sequelæ, anæmia, paralysis, etc. In short, the evidences of blood poisoning are equal to those presented by any disease conceded to arise from this cause. The only question is, whether this foreign element in the blood is of primary or secondary origin; whether it is derived from without, or is generated within the system. Chemistry throws no light on the subject, detecting no material poison in the air during a diphtheritic epidemic, nor any change in the constituents of the blood, when patients have died of the disease. Neither does the microscope reveal any sensible alteration in the blood. The much talked of bacteria are frequently seen on mucous surfaces in health, especially those of the mouth and fauces, as well as when covered by morbid secretions; and it is a well-established fact that they are not developed in any considerable quantity unless the surface is diseased, thereby affording a favorable *nidus* for their propagation.* The inference, therefore, is, that the material agency that produces the disease is from without, and is either a septic poison derived from the atmosphere, or is partly of atmospheric, and partly of paludal origin. The prevalent opinion is, that the poison or poisons

*Drs. H. C. Ward and H. F. Formad, in their report on the Production of Diphtheria in the Lower Animals, give as the result of their investigations, which have been very thorough, the following conclusions. Thirty-two experiments were made, in which fragments of membrane from patients with diphtheria were inoculated under the skin or the mucous membrane of the mouth of rabbits, cats, dogs, and a goat. Six rabbits, out of eighteen, died. In no case was there anything like diphtheria caused—with one very doubtful exception. Of those that died none had their internal organs infested with micrococci, as Oertel has asserted. Thus were confirmed the observations of Curtis and Satterthwaite, who made an elaborate investigation in regard to bacteria, which they reported to the International Medical Congress in 1876. —*Phila. Med. Times, Oct. 23d, 1880.*

causing diphtheria emanate from, and are aggravated by, personal filth, damp dirty habitations, defective sink-drains, impure water, foul privies, hen-coops and pig-sties, garbage, and other exposed masses of decomposing animal and vegetable matters.

SEQUELÆ.—1. *Extreme Debility.* One of the most constant sequelæ of an attack of diphtheria is extreme prostration. This condition is so marked, that a long time frequently elapses before the patient regains his usual strength.

2. *Paralysis.* This is usually local or partial, but is sometimes general. In some cases it assumes a progressive form, affecting in succession every portion of the body. But in most cases the paralysis is limited to the muscles of the soft palate and pharynx. The paralysis comes on gradually, and is not generally fully developed until the second or third week after the disease has run its course. When the muscles of the eye are affected, there is impairment of vision. In other cases the paralysis involves the muscles of the lower extremities; sometimes, also, the lower sphincters are implicated. Loss of virile power is not uncommon, the male organ remaining, in some instances, flaccid and incapable of erection for a long period. This form of paralysis however, is seldom permanent, though weeks and even months may elapse before the affected muscles are restored to their natural condition.

3. *Albuminuria* is present in many cases, though not usually to so marked a degree as in scarlatina. The full import of this symptom has not yet been determined, though Bright's disease appears in some cases to have been fully developed. Hence, the presence of albumen in the urine, though by no means a diagnostic sign of the disease, is a symptom of very grave importance, and should in all cases be regarded with suspicion.

4. *Cough*, *ozœna*, *glandular abscesses*, *erysipelas* and *otorrhœa* are also among the sequelæ occurring with greater or less frequency in cases of diphtheria.

TREATMENT.—In the treatment of the disease, the practitioner should never lose sight of the fact that it is a constitutional affection, and therefore requires constitutional rather than local treatment. Nevertheless, local remedies are capable of doing much good, 1st, by quickening the circulation in the affected parts, and so facilitating the detachment of the false membrane; 2d, by disinfecting the de-

composing tissues, and so putting a stop to the reinfection of the system; 3d, by assisting to arrest the gangrenous process in the fauces and neighboring parts, and so limiting the formation of sloughs; and, 4th, by destroying the minute vegetable fungi, the bacteria, sometimes called micrococci, which, finding a favorable *nidus* for their development and growth in the diseased structures, multiply to an extraordinary extent, and, by attaining access to the circulation through the abraded surfaces, exert a highly poisonous effect upon the system. Experience, therefore, has abundantly demonstrated the value of gargles and washes composed of *pure alcohol*, *dilute carbolic acid*, *salicylic acid*, *chloride* and *permanganate of potash*, and many other remedies of like character. The same remedies may also be administered by *inhalation*, or by means of an *atomizer*.

TRACHEOTOMY.—Speaking of tracheotomy in diphtheria, Dr. Gross says:—"The system is allowed to become thoroughly poisoned by the morbific element before tracheotomy is proposed. If it were done early in this disease, the probability is that life would much more frequently be saved. As it is now, life is generally sacrificed. At the Berlin Hospital 754 tracheotomies have been performed for the relief of diphtheria in fifteen years, 1861–1875. Of these cases, thirty-three and a third per cent. recovered from the effects of the disease and of the operation. I am quite sure that the operation, if rightly performed, is attended by but slight mortality rates. The statistics of the hospital which I have just mentioned, show that the greatest number of deaths occurred before the second year of life, and that the most recoveries took place after the fourth year. When the affection was endemic it was also shown that the mortality was greater."

The chief constitutional remedies are:

For the septicæmia: Arsenicum, Carbo veg., Mercurius proto-iod. and cyan., Muriatic and Nitric acids, Kali bich., and Calc. chlor.

For croupous complications: Bromine, Kali bich., Hepar sulph., Tartar emet. and Mercurius cyan.

For general debility and prostration: Arsenicum, China, Helonin and Phos. acid.

For enfeebled heart: Digitalis, Caffein, Veratrum alb.

For swelling of the glands: Lachesis, Mercurius iod. or bin-iod., Calc. chlor.

For nasal complications: Kali bich. or permang., Arum triph., Lachesis.

For myalgia and rheumatism: Baptisia, Rhus tox., Bryonia, Salicylic acid.

For paralysis: Arnica, Gelsemium, Rhus tox., Nux vom.

For albuminuria: Arsenicum, Canth. and Nitric acid.

For ozæna: Aurum, Pulsatilla, Mercurius.

THERAPEUTIC INDICATIONS.—*Arsenicum.*—Malignant cases, attended with great prostration and severe typhoid symptoms.

Apis mel.—In all stages, but particularly when the parts are violently inflamed, the uvula swollen, and attended with pricking and stinging pains.

Arum triph.—When the discharge from the nose is of an offensive sanious character, with excoriation of the nostrils and lip.

Baptisia.—Typhoid symptoms, with sensation of great fullness, œdematous swelling of the affected parts, and great difficulty of swallowing.

Causticum.—Extreme sensitiveness of the throat, after exfoliation of the membrane.

Calc. chlor.—When there is much swelling of the tonsils and glands of the neck.

Cantharides.—When there is much burning in the fauces, and the exudation looks like blisters.

Gelsemium.—Post-diphtheritic paralysis, with double vision.

Lachesis.—Exudation commences on the left side and extends to the right, and up into the nostrils, with much toxæmia; when attempting to swollow liquids they run out through the nose; touching the throat causes feeling of suffocation.

Lycopodium.—Exudation begins on the right side and extends to the left; feeling of constriction in the throat, nose or chest; great fullness on eating a little, with rumbling in the bowels.

Kali bich.—Circular ulcers in the throat, appearing as if punched out; yellow coated tongue; expectoration of tough phlegm; pain on swallowing extends to right ear.

Mercurius biniod.—Glandular swellings; exudation in patches, transparent and easily detached.

Mercurius cyan.—Malignant cases, with swelling of the parotid gland, gangrenous condition of the fauces, and great prostration; exudate has a honey-comb appearance, and is of a dark gray or brownish color.

Nitric acid.—Great debility, with pricking in the throat, as from a sharp object.

Muriatic acid.—Great weakness, with rawness and smarting of the fauces.

Sulphuric Acid.—Ulceration with large exudation.

Lac caninum.—Dr. C. Lippe gives the specific indications for this remedy as follows: The ulcers go from one side to the other and back again; the ulceration has a glistening shining appearance (Apis); the swelling of the glands changes sides and is painful to the touch, and the nasal discharge excoriates the nostrils and upper lip (Arum triph).

Clinical Observations.—Dr. W. H. Burt says: "If my opinion was asked, What, in your judgment, are the best remedies for diphtheria? comparing the remedies to a tree, placing the most useful at the top, I should build my tree as follows: At the top would be placed the Cyanuret of Mercury, next to it the Iodide of Mercury, and next to that Kali bich., and then in the following order, Phytolacca, Belladonna, Baptisia, Lachesis, Apis m., Arsenicum, Nitic acid, Iodine, Bromium, Rhus vernix, and Chloride of Lime. The last one mentioned, I believe ought to be placed up in the branches of the tree. I have used it many times with excellent results, but not enough to know just where to place it in the tree."

Coffee.—Dr. F. L. Peirs says: "Should that most critical period in the history of this disease arrive, when the heart begins to fail from paralysis of its muscles and all artificial efforts prove unavailing—at such a time I know of but one substance that gives promise of happy results; it is *coffee*, hot, strong coffee, such as the French know how so well to prepare. Almost instantly its stimulating effects upon the heart becomes apparent, that organ is supplied with renewed force, and by its use sufficient action has been sustained to pass the climax and encourage nature to a final victory.

It may be given as copiously as can be borne without detriment. Sugar is admissible, but milk or cream added impairs its efficacy."

Bromine.—Dr. W. H. Holcombe says: "I was called to a child about two years of age, who had been treated for five or six days for diphtheria, which, notwithstanding repeated cauterizations and vomitings had attacked the larynx. The last consultation, held by three allopathic physicians, was to discuss the propriety of tracheotomy as a last resource. The child was breathing with fearful difficulty, voice wholly extinguished, circulation flagging, skin cold and blue—they determined *not* to operate, as they considered death imminent and certainly inevitable. Under these circumstances I was called to take charge of the case.

"I wasted about twelve hours in trying *Kali bichromicum* 2d dec., and then *Kaolin* 6th. My experience with diphtheritic croup has not been pleasant or favorable, and I hardly knew where to turn for a remedy which I believed would be strictly homœopathic to the case. At last I ordered *Bromine*, one drop to four ounces of glycerine and water, (equal parts) one teaspoonfull every half hour. In a few hours improvement was decided, and the interval lengthened to two hours, and afterward to three times a day. Convalescence went on rapidly, and the child made a beautiful recovery, although he did not recover his voice for two weeks. This case ought to have convinced our three allopathic friends of the truth of *similia similibus;* but there are minds that would not, and indeed could not believe, "though one rose from the dead."

M. Teste's treatment for diphtheria is *Bromine water*, which he administers in sweetened water, as follow:

"1. Prepare and have always at hand a glass of water very sweet.

"2. Give every hour in diphtheritic angina, and every quarter of an hour in croup, one, two, or even three drops of the Bromine water in a teaspoonful, or, if preferred, in half a teaspoonful of sweetened water.

"3. Lengthen the time and reduce the dose at the end of a few hours, but without allowing an interval of more than two hours between them.

"4. It is better in administering the medicine to use a glass spoon or a wine glass, since Bromine attacks silver and forms with that metal a bromide, thereby reducing the dose absorbed.

"5 Impose upon the patient, whatever may be his age, an absolute diet, at least during the day. At the most allow small children a little sweetened wine and water, and to adults a few spoonsfull of rich broth. Diet presents here the double advantage of accelerating the absorption of the medicine, and preserving it from doubtful contact.

"6. A gargle of vinegar and salt water (a spoonful of vinegar and as much sea salt in a glass of water) has never seemed to injure the action of the remedy, and in diphtheritic pharyngitis, contributes, by cleansing the throat, to the detachment of the false membranes.

"7. Be particular to keep in the chamber of the patient, as a prophylactic, for the sake of the persons who approach him, a saucer of Bromine water, which ought to be renewed at least twice in twenty-four hours.

"The curative action of the Bromine, if no violation of the regimen hinders, manifests itself in a very short time. It is rare that the first three or four teaspoonsfull do not lower the frequency of the pulse in a marked degree, for example from 140 to 80, as I have had many times the opportunity to notice. The lumbar pains, often very severe, which accompany the fever of diphtheria, are moderated. As to the local symptoms they improve slowly, just as we frequently observe in croup, a diminution and almost instantaneous modification of the cough taking place, which becomes every hour less hoarse, stridulous, and frequent. At the same time it is only after twelve or eighteen hours of treatment that the false membranes begin to turn back and become detached. But to resume, except in rare cases, in which an abscess of the tonsils complicates the disease or increases the duration, it is exceptional that a total resolution may not be expected in three days."

Dr. S. M. Fowler reports the following case: "Patient was an Irish servant girl in one of our leading hotels; a very large, fleshy person about twenty-two years of age; fair, rosy complexion, with dark hair and blue-gray eyes. She complained of sore throat

which was growing rapidly worse; some fever; difficulty of swollowing; worse on right side. Inspection revealed right tonsil intensely inflamed; bright red and greatly enlarged, and a spot the size of a dime, of a yellowish gray color upon the inner surface. The whole pharynx, uvula and velum were much inflamed. I diagnosed a case of diphtheria, and gave *Kali bich.* 3 internally, and *Kali bich.* 1 in solution as a gargle, with instructions to report next morning. Report no improvement; but, if anything, worse, and I was requested to call.

"Found the spot larger and others forming in the pharynx, and the other tonsil nearly as large as the one first affected, with considerable more fever, and the characteristic fetor of the breath. Changed medicine, giving *Merc. cyan.* 6 (which has done me splendid service in such cases) alternating it with *Bell.* 3-30, every hour.

"The following morning found all of the symptoms aggravated, and on face, hands, neck and chest, a bright scarlet eruption, exactly resembling scarlatina. Almost total inability to swollow, especially fluids. Gave *Bell.* 2c, every hour for six hours. No better. Gave *Lac. can.* 2c. in solution one teaspoonful every hour, which was followed by almost instantaneous relief, which, without any other remedy, entirely cured the case, and she resumed her duties in forty hours, and has been well from that time, May 2, 1879."

The following clinical observations in cases cured by *Lac. can.* are by Dr. C. F. Nichols, of Boston:

"Pains in limbs, small of back and head disappear, and the throat becomes more painful but looks better. Often the ulcers increase in size or number, but the neighboring membrane looks clearer; worse by empty deglutition; throat feels stiff; relief after drinking, warm or cold, no thirst but dry mouth; pain pushes toward left ear; right tonsil raw, swollen, gray-white membrane there and on the fauces; epistaxis when speaking or swollowing, in one case; sweat all over; great exhaustion with "poisoned feeling;" frequent micturition, urine dark; restless, legs and whole body; face burns, dry; constant spitting, drooling—in one case, a man, very quickly relieved; imagines he wears somebody else's nose—same case; ulcers small, round or irregular, gray-white; voice hoarse; in-

terrupted by weakness and hoarseness. Several cases cured resembled *Lachesis.*

"Did not cure sore lumps in left throat, not sensitive externally; pain during empty deglutition, also painful deglutition with liquids and food; restless anxiety; thirst for large quantity; blue engorged tonsils. *Lachesis* cured. Perhaps in this case the blue, engorged tonsils is the indication for *Lachesis*, as the other symptoms seem to clearly indicate *Lac can.*"

Kali bich.—The following case and observations are by Dr. Thos. Nichols, of Montreal: "On May 21st I was called to R. S., æt. eleven months, said to have suffered from "a cold" for several days. I found the child lying on its mother's lap, very weak and languid, with low fever and almost total inability to nurse. I was told that it had been restless during the night, and that, though it desired food, it had been unable to swollow. The face, especially the forehead, was of a bluish tinge, and the nose looked pinched and the mouth drawn. I applied the stethoscope to the larynx and found a thick gurgling sound, intermingled with a flapping noise, as of a piece of loose membrane. I then examined the pharynx, and found it red and swollen, while on the tonsils and between them was a thick tenacious membrane, of an ashy-grey color, and this membrane was tough and glutinous, and it possessed the well known characteristic *that it could be drawn out in long strings.* I put a grain of Kali bichromicum, second decimal trituration, into a cup of water, and directed a teaspoonful to be given every hour. Next day the patient was better in all respects, and it was dismissed on May 25.

If the reader delays its use till the often mentioned indication for Kal. bichr. appears, viz., stringy, tough mucus, which may be drawn out into strings, he will lose many chances for using this drug successfully. It is indicated, where *the mucous membrane is deeply affected, and there is much ulceration; the mucus is frequently streaked with blood;* pain in the throat; painful, difficult swallowing; great weakness; cachectic look; swollen glands. Frequently the nose is also affected."

Dr. G. N. Brigham says:—"I have seen little to lead me to think the remedies ordinarily relied on for membranous croup will cure diphtheritic croup, using the term in the sense of croup coming

on from infectious contagion. These cases are usually fatal in our hands, and in the hands of those with whom we are acquainted. We have come the nearest to success, in the use of Cantharides, Iodium, Kali bichromicum and Lachesis. Two of these, it is true, have obtained the confidence of the profession beyond most other remedies in simple exudative tracheitis. Yet they, by no means, have gained an equal reputation in the treatment of the malignant diphtheritic croup. Jodium and Kali bich.,also, have been used successfully for diphtheria without croup. I am inclined to think, that we shall gain most by seeking a remedy which shall best control the primary morbific force of the disease, making the croupal symptoms secondary, as we do exudation at any other focal point, not, of course, discarding the special symptoms that arise in the trachea. Possibly some of these agents may be used more in the nature of adjuncts; yet I have great faith, that, if we are able to strike at the infectious germs, we shall do the very best that can be done for our patients. We shall arrest the disease before we have the tracheal complications, which is doing the very best that can be done. I once had a Lycodium case treated so well, that the friends discharged me at the second visit, thinking there was no need of paying a doctor further. Ten days later the patient died of diphtheritic croup, when, had I continued in charge two days longer, the case would have been safe against tracheal exudation. The remedy which has the similimum, in the broadest sense, is likely to be our remedy, still with the dangerous tracheal complications. It may be Apium virus, Bromine, Cantharides, Iodium, Kali bich., Lac caninum, Lachesis, Lycopodium or Sulphur. If the trachea is involved to the extent of exudative casts being formed, they usually extend also into the bronchia, a thing not common in simple, non-contagious croup. I have sometimes thought favorably of the inhalation of alcoholic vapor in these cases, and I would suggest its use with the homœopathically-chosen remedy."

"Miss L. Smith, teacher, aged twenty-four years, was taken very suddenly with chills while at dinner; the neck was sore and stiff, stiffness seeming to extend more to the muscles on the *left side*, and a sensation of obstruction to deglutition with rapidly-increasing soreness in the right pharyngeal and tonsillar region. Patient called me and expressed herself much surprised with the sudden develop-

ment of these symptoms, as she had not thought herself sick or even unwell till she went to dinner. I found the right tonsil considerably enlarged, looking brownish, and a thin gray membrane developing over the middle of the tonsil, of the size of a twenty-cent piece; fauces were also swollen and had the dark brown hue. Patient had been teaching in a ward where diphtheria had prevailed, and several of her pupils had been taken down with the disease in school and in the interim between roll call. Gave Lycopodium[20] to repeat once an hour. Saw patient in the evening, and found her better. Next morning patient was convalescent, the attack having been aborted.

Next day was called to another case, a Miss of fourteen, with the right side attacked, brownish-red color of the right tonsil and pharynx to the right of the median line; there was much œdema, as well as an enlarged tonsil with swelling extending toward the left. Tonsil was loaded with gray-colored fibro-mucous deposit, and masses hung down from the pharynx behind the uvula, and seemed to extend up the posterior nares, blocking the passages. Exudation was adherent and seperated from the epithelial surfaces with difficulty. Disease was of two days standing; at least, the first symptoms were declared thirty-six hours previous. Gave Lycopodium[200] with a convalescence the third day from commencement of treatment."—*Idem.*

Amaurosis.—Dr. W. J. Martin reports the following case:

"Oct. 1, 1879.—Was called to see a girl aged 8 years, sick with diphtheria. It was a moderately severe case, recovering in six days. The only medicine used was Merc. cyan[6], trit.

About a week after the child's recovery she returned to school, but in a few days complained that she did not see well, and was finally sent home by her teacher, being unable to read from her book or perform her exercises at the blackboard.

Oct. 19.—The child was brought to the office. Objectively the eyes appeared all right, but she could not name the large letters on the title-page of a book.

I had never met such a case before, but remembered reading in the *Organon* for January, 1880, a report of two similar cases by Dr. H. N. Martin, cured by Lach.[200].

Now, as these two cases "might have got well anyhow," as so many of our friends say who do not believe in cures with any but

low potencies, I thought I would give my case a chance, told the mother to keep the child from school, and not allow her to use the eyes for close vision, did not give any medicine, and told them to return in one week.

Oct. 25.—The mother reports the child much worse, and in addition to losing her sight she was losing her speech. She received twelve powders of Lach.^{200}, a powder to be taken night and morning. No more medicine was given, and in two weeks she was well and has remained so ever since."

Dr. Grubenmann, of St. Gallen, says:—"For a year and a half we have had in St. Gallen and vicinity an epidemic of a combination of scarlet fever and diphtheria. For a year it has been diphtheria purum of a quite pernicious character. This latter disease appears to have now reached its end, for I have neither seen nor heard of a case for four weeks. I take the liberty of communicating to my colleagues my treatment of this disease. I have treated about fifty cases and cured all without an exception. Light cases (*catarrhal diphtheria*) are not included in these fifty cases. There were four adults all affected with considerable fever; temperature from one hundred and two to one hundred and four in the first twenty-four hours. Of the children, from two to twelve, at least a quarter were severe cases; two being well marked cases of the *septo-gangrenous form*. There were no cases of the laryngeal variety, nor was a case followed by dyphtheritic paralysis or paresis. Until three years ago I treated diphtheria with *Apis* 6 to 30, *Bromine*, *Belladonna*, *Kali phos.* and *Merc. cy.*, 3d to 6th, all in the centesimal dilution, with favorable, but not striking results. I began to lose confidence in *Merc. cy.* over three years ago, until I began to use it as recommended by Dr. von Villers, not below the 6th cent. It is a pleasure to here acknowledge my indebtedness to him for many valuable hints gathered from his publications. During this epidemic I have employed *Merc. cy.*, but never below the 15th cent. (from the 15th to the 30th) and therewith subdued the disease. Generally in twenty-four hours from the administration of that remedy the favorable effects were apparent, and after ninety-six hours more the throat was fully restored to its normal condition. The greatest length of the cure in cases which first came under my care in an advanced stage was ten days. I proved that *Merc. bin.*, which is so strongly

recommended by my honored colleague, Dr. Goullon, Jr., has by no means the favorable effects I had anticipated, for I tried it on four cases in one family, without perceiving any favorable results; after thirty-six hours I saw such an increase in the patches in the throat, that I gladly resorted to the *Merc. cy.*, and I soon perceived a prompt decrease of the membrane. ' Another trial in a child of ten years gave the same result."

In closing this subject, I am happy to be able to add my testimony to the efficiency of *Merc. cyan.* in the worst forms of malignant diphtheria. Three years ago, when a severe epidemic of the disease was raging in Covington and vicinity, several cases of the most malignant character came under my treatment, and although the symptoms were of the gravest character, they all recovered under the use of the 12th attenuation of *Merc. cy.*—*Hart.*

CHAPTER X.

TUMORS.

Tumors of the air-passages may be divided into two general classes, malignant and non-malignant. The former consist of carcinomata and sarcomata; the latter, of papillomata, fibromata, myxomata, angiomata, lipomata, and cystic tumors.

1.—MALIGNANT TUMORS.

Under this head we include both carcinoma and sarcoma, though the latter is of a semi-malignant, instead of a malignant nature.

(1.) CANCER.—Cancer may attack any portion and tissue of the air-passages, but is mostly confined to the pharynx, larynx and trachea; the tongue and tonsils are more rarely affected by cancerous degeneration. Cancer of the *tongue* has already been described under the head of oral affections (q. v.). Cancer of the *tonsils* is usually of the encephaloid variety, and is most commonly met with in the male sex. The disease may attack one or both tonsils, and may be either primary or secondary. It first assumes the form of a tumor imbedded in the substance of a gland, at which stage it is liable to be mistaken for chronic induration and hypertrophy; but after ulceration has set in, there is little difficulty in arriving at a correct opinion. Moreover, hypertrophy of the tonsils generally sets in during childhood, and is seldom met with after middle age; whereas, cancer rarely occurs before the period of adult life, and then progresses rapidly to a fatal termination.

Cancer of the *pharynx* may originate in the tonsils or in the pharyngeal walls. In the latter case, the disease usually attacks the lower portion of the posterior wall of the pharynx, in the vicinity of the œsophagus, and is generally included under the head of cancer of the œsophagus. As the disease progresses, it passes round the sides of the pharyngeal cavity, until it invades the larynx. When

seated in this region, the symptoms are nearly the same as in cancer of the œsophagus, there being more or less *difficulty*, but little or no *pain*, in swallowing. Consequently, as remarked by Mackenzie, the patient takes more food, and lives longer, and more time is allowed for the development of the characteristic cancerous cachexia. Death, however, is generally caused by starvation, but sometimes by hemorrhage from a perforated vessel. The disease in the superior pharyngeal region, is usually of the scirrhous variety; and as the malady progresses, the induration gradually extends over the pharynx, until, in some cases, even the veil of the palate and the posterior nares are reached. At length ulceration sets in, accompanied with fetid exudations, and at a later period numerous fungous growths make their appearance. When the disease originates in the inferior portion of the pharynx, which is by far the most common situation, it is generally of an epitheliomatous character, and usually begins just below the level of the arytenoid cartilages. Sometimes it commences in the thyroid fossa, but in both cases it soon spreads to the larynx, causing much swelling of the tissues, followed by ulceration and death.

But the most important, if not the most frequent seat of cancer, is the *larynx*. In this, as in the other localities mentioned, it may not only develope primarily, but also secondarily by extension from other parts. Owing to its comparative frequency and importance in this situation, we shall treat of it under the usual heads.

Etiology.—The true cause of cancer is still unknown; but its comparative frequency in the larynx would seem to be due, in a measure at least, to the constant functional activity of that organ. Bosworth states, that out of five hundred laryngeal tumors, he found one hundred of a malignant character. Age seems to be an important factor in the etiology of cancer, as the great majority of cases occur in advanced life, or between the ages of fifty and seventy years. Sex, also, appears to have considerable influence, the ratio of males to females being nearly as four to one. Heredity exerts a controlling influence in most cases, but sometimes the malady appears to result from traumatic or other causes. In short, cancer of the larynx offers no exception to the general laws of morbid development, as exhibited in other organs of the body.

Symptoms.—At first the symptoms are somewhat obscure.

More or less pain, dyspnœa and dysphagia are generally present, but these symptoms offer nothing distinctive until after the disease has made considerable progress. The pain is at first limited to the region of the larynx, and it is not until ulceration sets in that it acquires a distinctive character, by radiating to more remote parts. The pain then shoots to the ears, orbit and forehead, and is sometimes, though rarely, felt in the cervical and submaxillary glands. The voice is soon altered, becoming deep and hoarse at an early period; but, although the alterations are progressive, and correspond for the most part to the development of organic changes in the larynx, the voice is seldom entirely lost, as it is in tuberculous disease of the organ. Dysphagia is a prominent symptom, but, unless the posterior wall of the larynx is involved, generally offers no inseparable obstacle to deglutition. This is especially true if the disease is of the epithelial variety; but if the tumor is of the scirrhus or encephaloid sort, the difficulty of deglutition may become so great as to render the swallowing of solids impossible. Dyspnœa may also be a troublesome symptom, especially if the cavity of the larynx is much encroached upon. But the functional symptoms vary very much in different cases, and unless confirmed by laryngoscopic evidence, are of but little use in settling the diagnosis. The objective symptoms, on the other hand, are sufficiently characteristic. As soon as ulceration sets in, there is more or less fetor of the breath, and this alone frequently serves to indicate the nature of the affection. As the ulcerative process advances, hemorrhage is liable to occur, from the opening of one or more small vessels. At a more advanced stage of the malady, the glands of the neck become enlarged from secondary infiltration, presenting that hard, dense feel characteristic of malignant disease. The cancerous cachexia does not manifest itself as early, nor to as great a degree, as in other organs, probably because, as pointed out by Mackenzie, the connection of the lymphatics with the glandular system is not nearly so free as in the pharynx and other parts.

Laryngoscopic Symptoms.—The laryngoscopic image varies according to the kind, seat and stage of the affection. In the majority of cases, the disease springs from one of the ventricular bands; next in frequency the epiglottis and vocal cords are affected. If the disease belongs to the encephaloid variety, the tumor is nodulated,

ulcerates early, and takes on a fungous appearance, the vegetations springing from the ulcerated surface, while the surrounding mucous membrane is but slowly encroached upon by the growing tumor. In epithelioma, on the other hand, these processes are reversed; that is, the vegetations spring up about the margins of the ulcer, instead of from its surface, and thus increase its tendency to spread. But it is often extremely difficult to distinguish malignant growths of the larynx from benign tumors, especially in the earlier stages, even by the aid of the laryngoscope, and the diagnosis will generally need to be confirmed by the subjective symptoms, as well as by the clinical history of the case.

(2.) Sarcomata.—This class of malignant growths is of rare occurrence in the air-passages. They are characterized by a diversity of cell-elements, which vary greatly in size and form, being round, spindle-shaped or myeloid, connected by intercellular tissue, and supplied with numerous blood-vessels. They vary in malignancy, the round-cell sarcoma being the most, and the myeloid, the least malignant of all. They are sub-mucous, springing from the perichondrium, or from the deep layers of the mucous membrane, and, although less malignant than cancerous growths, spread, as a rule, more rapidly. They vary greatly in form, some presenting a rounded, smooth outline, others a more diffused, irregular appearance.

Treatment.—The treatment of malignant tumors is either palliative or radical. The palliative treatment consists (1) in spraying the diseased surface with some cleansing or disinfecting substance, such as diluted carbolic, acetic, salicylic or sulphurous acid, solutions of sulpho-carbolate of zinc, permanganate of potash, salicylate of soda, chloride of lime or soda, etc.; (2) the application to the ulcerated surface of the salts of hydrastia, iodoform, extract of belladonna, conium, etc., properly diluted; and (3) the internal administration of sarsaparilla, galium aparina, cundurango, and such other remedies as the contitutional condition, and the exigencies of the case, may seem to require.

The radical treatment consists in the removal of the tumors by the endo-laryngeal method, by thyrotomy, and by extirpation of the larynx. Now, when we consider that the death of the patient is only a matter of time, that the endo-laryngeal method gives only temporary relief, that, with one exception, extirpation of the larynx

has resulted in prolonging life only a few months at most, while in several cases death has ensued in a few days after the operation—I say, considering the temporary and unsatisfactory character of the results hitherto attending operative procedures in these cases, we may well question whether what is called the palliative treatment is not the only kind called for, or even justified, in this class of maladies. Certain it is, that any surgical interference with malignant tumors, short of complete extirpation, will be attended with the danger of exciting renewed activity in the morbid growth, as the history of such operations abundantly proves. Nor does the operation of removal, by extirpation of the larynx, though pronounced "the most brilliant operation of the age," offer anything more hopeful; for, "of the sixteen cases of carcinoma operated on, seven died as the result of the operation, one died at the end of six weeks, from an accident, seven succumbed to a recurrence of the original disease, at periods varying from four to ten months after the operation, while in only one case was the operation really successful." (*Bosworth.*) As for prolonging life, the operations of thyrotomy and tracheotomy are not only equally successful, but much simpler, and far less dangerous. Tracheotomy should, as a general rule, be resorted to as soon as dyspnœa sets in.

2.—NON-MALIGNANT TUMORS.

Tumors of the nasal cavity have already been considered under the head of polypus of the nose (q. v.). Benign tumors of the pharynx include nearly every known variety, and are sometimes of a very large size. Some are pedunculated and some are sessile; some are smooth and globular in form, and some are lobulated and resemble nasal polypi. As they differ in no essential respect from similar tumors of the larynx, we shall find it most convenient to consider them under one and the same head.

VARIETIES.—*Papillomata* are usually about the size of a split pea, though they sometimes attain the size of a walnut. They are generally sessile, are frequently multiple, and sometimes occur symmetrically. They vary in color from a white to a pink, or even bright red. They are analogous to warty growths on the skin, and are far the most common form of tumors met with in the air-passages. They generally spring from one or both of the vocal cords; but are

sometimes found on the epiglottis and the commissure of the arytenoids.

Fibromata vary in size according to situation. In the larynx they are generally about the size of a split pea, but in the pharynx their diameter is frequently much greater. They are generally of a smooth, roundish form, but sometimes they are rough, irregular and lobulated. They consist of dense fibrous tissue, the fibres interlacing in every direction. They spring from the submucous tissue, and are commonly seated upon the vocal cords or the epiglottis. They are usually of a rather bright red color, and generally single.

Myxomata are very rare, having been met with in the larynx but twice. They are composed chiefly of mucous tissue, are more or less transparent, and of a bright pink color.

Lipomata, though common enough in the pharynx, are of extremely rare occurrence in the larynx. A case is recorded in which a fatty tumor, springing from the pharynx and epiglottis, hung down nearly ten inches into the œsophagus. According to Mackenzie, the only case on record in the larynx was bilobate, of a yellowish white color, and had a membranous pedicle, which appeared to project from the whole length of the ventricle.

Angiomata are also extremely rare. They consist of a congeries of blood-vessels, held together by loose connective tissue. They are of a bluish or purplish color, and in size and appearance are not unlike ordinary blackberries.

Cystic tumors are small cysts filled with fluid or semi-fluid material. They are frequently attached to the epiglottis, and sometimes spring from the ventricle of the larynx. Like all cystic tumors, they are round and smooth, of slow growth, and have a reddish appearance.

Symptoms.—The symptoms that mark the existence of morbid growths in the air-passages, are chiefly of a mechanical character, and depend upon the size, nature and location of the neoplasm. If the tumor is attached to the vocal cords, the voice is more or less affected, being either lost or greatly impaired. If it springs from the pharynx or epiglottis, it is apt to produce dysphagia. Large growths, wherever situated, are likely to cause dyspnœa, sometimes extreme. But the subjective symptoms alone are not to be depended on as a means of determining the diagnosis, though they may be

sufficiently characteristic to render the existence of tumors highly probable. For example, the voice has been found to be impaired in over ninety per cent. of all cases, and in more than half of them it was entirely lost. A singular fact, noticed by Czermak, is, that a small tumor in the larynx generally interferes more with vocalization than a large one. Growths on or below the vocal cords almost always impair the voice, and often produce aphonia, while those situated above the cords, or on the epiglottis, seldom affect it, unless they are of very large size. Dyspnœa occurs in about one-third of the whole number of cases, and, next to ocular evidence, is the most characteristic symptom. When the growth is large and pendulous, the dyspnœa sometimes sets in suddenly, and with great intensity, in consequence of the tumor accidentally swinging over into the laryngeal opening and occluding the glottis. Neither cough nor pain are very common or very prominent symptoms, though the former is occasionally very severe, and in children is apt to be of a croupy character. Dysphagia is most apt to occur when the tumor is large, and situated either in the pharynx or on the epiglottis. It is sometimes met with, however, when the tumor springs from the arytenoid cartilages.

But in most cases the laryngeal mirror furnishes the only conclusive evidence of the existence of morbid growths in the air-passages; and, what is frequently of far greater importance, it enables us to determine with precision their size, shape, location, and often their exact nature. The vocal cords are found to be affected in more than seventy-five per cent of all cases. A small growth, called by Türck *chorditis tuberosa*, is frequently developed in this situation, about midway between the vocal process and its anterior attachment, and owes its discovery to the laryngoscope. It consists of a minute, rounded, sessile projection, which is most distinctly seen in profile. It is of a grayish color, surrounded by a hyperæmic area, developes very slowly, and, although it seldom attains the size of a pin's head, gives rise to more or less hoarseness or aphonia. This will serve to illustrate the great value of laryngoscopy, as a means of diagnosis in diseases of the larynx.

Treatment.—While we are free to admit that operative measures are generally necessary for the extirpation of morbid growths in the air-passages, we are convinced that their removal by

mechanical means is not always required; and with the view of impressing this fact more forcibly upon the mind of the reader, we will introduce an interesting case which recently occurred in our practice. It shows the importance of giving the first place to general treatment, which may not only effect their removal, but overcome the constitutional condition that produces them. We trust, therefore, that, notwithstanding its length, we shall be pardoned for giving the history of the case in full.

"On the morning of Sept. 6th, 1879, I received a telegram from Mr. F———, of Dayton, stating that his sister, Mrs. L———, had been suddenly seized the night before with great difficulty of breathing, and as she had not been able to obtain any relief from the remedies usually prescribed in such cases, he wished me to see her as soon as possible. I found the patient, a widow lady of about 45 years of age, propped up in bed, with red and bloated face, labored breathing, short, paroxysmal, choking cough, and evidently laboring under some mechanical obstruction of the larynx. Both the pulse and the temperature were but slightly elevated, and as there was no soreness of the throat, or any form of acute inflammation complained of, I was at first considerably puzzled; but, on making a laryngoscopic examination, which was attended with some difficulty, I discovered three enlarged muciparous glands upon the posterior margin of the aryteno-epiglottidean fold, in front of the left arytenoid cartilage, which were so closely aggregated as to form a tumor of the size of a split pea. (*Papilloma?*)

As I was many miles from home and unable to make a protracted visit, I was extremely anxious to make, if possible, a "centre shot" at the first fire. Before prescribing, therefore, I adopted Hahnemann's method, and noted down systematically every symptom of ill health that could be obtained. I found that since the birth of her first child, a period of seventeen years, she had, to use her own words, constantly suffered from pain in the back, especially in the upper dorsal region, which she said was never absent. She also suffered from what she called a "smothered feeling" in the chest, worse just before the appearance of the menses, which were scant and painful. Notwithstanding the congested appearance of the face, it was easy to perceive that the patient was anæmic, low-spirited and extremely nervous. The extremities were generally cold, appetite poor, tongue coated white, bowels constipated or irregular, dull aching pain in the back of the head, and frequent attacks of palpitation of the heart. The last two symptoms, though frequently occurring at other times, were sure to appear every two weeks, reckoning from the menstrual period, which occurred every four weeks, but, as already stated, was attended with a scant and painful discharge. During the intermenstrual period the patient was annoyed with a yellowish leucorrhœa, sufficiently copious to soil the linen, and with a distressing pruritus of the vulva, which neither carbolic acid lotion nor any other local remedy would allay. In addition to these symptoms there were more or less heat and soreness in the region of the uterus, though the latter was not very marked. It was evident from these symptoms that the patient, in addition to the laryngeal trouble, was suffering (and had been for many years) from some form of inflammation of the womb, and had the occasion been a more favorable one for the purpose, I should have endeavored to individualize the case more closely by making a vaginal examination. As it was, I was compelled to prescribe from the knowledge already obtained, and with my previous experience to aid me in the selection, I concluded to give *Sepia* 30 every half hour until the patient's breathing should be so far relieved as to permit of her lying down, then less and less frequently,

p. r. n. Next day I received a letter, stating that after the middle of the preceding night her breathing had so far improved that she could assume the horizontal position without any inconvenience, though the cough still remained troublesome. I directed the remedy to be given only once in four hours, and to report the next day. The next report was still more favorable, so far as the respiratory symptoms were concerned, but I was requested to see her again in consequence of an aggravation of some of the other symptoms, which may properly be denominated uterine.

At this second visit the laryngoscope exhibited nothing abnormal, except a slight fullness and vascularity of the affected portion of the aryteno-epiglottidean fold; but a vaginal examination showed a highly congested, hypertrophied, ulcerated and *nodulated* state of the cervix uteri, especially of the posterior lip, and upon pressing one of the blades of the speculum upon the neck, there issued from the os several drops of yellow purulent matter. I now saw, what I had before strongly suspected, that I had to do with a severe case of chronic endocervicitis, and what was still more, and very peculiar, that it was complicated with a condition of the cervix, apparently similar to that which had attacked the larynx. Attributing the aggravation of the uterine symptoms chiefly to the action of the remedy, I determined to let the patient rest a week or two on *Saccharum lactis*, and then to administer the same remedy again in a higher form. Accordingly, the patient was directed to take a powder of *Sacch. lac.* every morning and evening, and to report every two or three days. Under this course everything progressed favorably for the next ten days or so, at which time the patient expressed herself feeling better than she had felt before for years. On September 25th I made another examination, and found less swelling and hardness, but the nodulated appearance of the cervix was still more marked, which I attributed, not to an aggravation of this condition, but to being thrown more into relief by a shrinkage of the internodular tissues. The discharge and pruritus were but little, if any, diminished. I now prescribed *Sepia* 200 every night at bedtime. It would lengthen this paper unnecessarily to give the subsequent history of the case. Suffice it to say that this was the last and only change made in the prescription until a complete cure was affected, though the remedy had to be continued, in an interrupted manner, for a period of over nine months. First the nodulated condition of the cervix gave way, then the dorsal and lumbar pains disappeared, and at last the leucorrhœal discharge, after gradually diminishing, until it ceased in the intermenstrual period only, finally disappeared altogether, and with it the terrible pruritus which had harassed the patient for so many years. In the meantime the pallor of anæmia has given place to the rosy hue of health, the languid step has become elastic, the countenance cheerful and expressive, and, as the patient happily expresses it, she has renewed her youth.—*Hart.*

Operative Measures.—Notwithstanding the difficulty experienced in carrying a simple loop of wire round a laryngeal growth, many prefer to operate in this manner. For this purpose, Gibb's instrument (Pl. VI., Fig. 5) is one of the best. It consists of a carrier for the wire, properly curved to enter the larynx, and provided with a ringed handle and a sliding cross-piece, against which the first two fingers rest. The wire is first passed through two holes at the end of the carrier, then along its groove and through the holes in the cross-piece, and after allowing for the loop at the end, is firmly fixed by two or three turns round the cross-piece.

After carefully introducing the instrument by aid of the mirror, the loop is thrown over the polypus, close to its base, and the noose is tightened by steady pressure on the cross-piece with the fingers. After division, the tumor is withdrawn in the noose of the instrument.

One of the greatest difficulties encountered in the application of the loop, is its liability to be bent out of shape by accidental contact with other parts, or by spasmodic contraction of the larynx, which, in spite of the most careful manipulation, will sometimes occur. To overcome this difficulty, Stoerk invented his guarded wire-loop *ecraseur*, (Pl. VI., Fig. 3,) in which the flexible loop is protected by a metal rim. It has the additional advantage, also, of permitting a very small wire to be used, whereby the growth is more easily cut through. The carrier, which in this instrument is secured to the handle by means of a socket and screw, may be readily set at any required angle.

Stoerk's guillotine so closely resembles his wire-loop ecraseur, that the same figure will do for both. (Pl. VI., Fig. 3.) The chief difference between them is, that in place of a flexible loop, a fenestrated blade, cutting at three surfaces, is substituted. This instrument is best adapted for the removal of fibrous growths, where considerable force is required to effect their separation.

Scissors are often the handiest instruments for the removal of foreign growths, when accessible, and of these I know of none more suitable than Heywood Smith's (Pl. VI., Fig. 1), the blades of which can be made to operate at any required angle. They are especially adapted to growths situated in the nares and fauces.

Forceps are in frequent demand about the nose and throat, not only for the removal of morbid growths, such as polypi, but of foreign bodies accidentally lodged in those parts, such as buttons, coins, needles, pins, fish-bones, and the like. The best forceps for general use in the upper air-passages are Cusco's double-jointed swan-bill forceps, figured in Pl. VI., Fig. 6. Owing to the double-joint, the jaws of the instrument can be fully opened without materially enlarging the curve, which is a matter of great importance in operating in such narrow passages. The grasping surfaces are roughened and fenestrated, so as to firmly grasp objects of every shape and nature. They should be introduced into the mouth

closed, and when they have been passed nearly down to the foreign body, the jaws should be widely opened, so as to grasp the object fully, then firmly closed upon it and carefully withdrawn.

Owing to the great nervousness of most patients, and the natural tendency to gag whenever any attempt is made to introduce a tearing or cutting instrument into the throat, and especially into the larynx, it is necessary before attempting to operate to accustom the patient to the requisite manipulations; and for this purpose, it is advisable to make frequent insertions of the instrument intended to be used in the operation. When the requisite tolerance is acquired, there is usually but little difficulty in performing the operation; as it is then simply necessary to guide the point of the instrument to the base of the tumor, by means of the mirror held in the left hand, while the patient protrudes his tongue and holds it between the thumb and fingers of his right hand. But in many cases it will be found that no amount of training will secure the requisite tolerance, and the operator will be obliged to depend upon his own special skill and experience. Having by repeated examinations and estimates determined the exact size, location and attachments of the tumor, and having acquired by frequent practice upon the patient or manikin the requisite dexterity in introducing the instrument, the operator by a quick and skillful movement seizes the tumor and removes it, before the patient is fully aware of his intention. To do this he is sometimes obliged to dispense with the mirror, and to be guided only by the knowledge previously obtained. Of course, such a method of operating, while it requires the greatest skill on the part of the surgeon, is to a certain extent both unscientific and uncertain, but it is the only endo-laryngeal method practicable in some cases, and when sufficient care is exercised, is often attended with the happiest results. The practitioner should remember, however, that the only safe rule to follow is, to study carefully the exact position, size and character of the growth, estimate accurately the precise distance and direction which the point of the instrument must take to reach the tumor, and then carry it quickly to its base, seize it as rapidly as possible, and remove it.

Thyrotomy.—On account of the serious dangers attending the extra-laryngeal method of removing tumors, we do not recommend it to the general practitioner, but relegate it wholly to the specialist,

who alone should incur the risk and responsibility attending such severe operations. Mackenzie gives statistics showing the comparative merits of *thyrotomy*, from which it appears that less than fifteen per cent. of the cases are attended with success, over eight per cent. with death, forty per cent. with aphonia, and nearly eighty per cent. with some impairment of the voice. Moreover, the danger from hemorrhage attending the operation is very great. In one case, Faurel "was obliged to apply thirty-eight ligatures, though tracheotomy had been performed a month previously, and the patient wore the canula during the time the thyrotomy was undertaken." Besides these formidable dangers, thyrotomy gives more recurrences than cures, while the endo-laryngeal method shows twice as many cures as recurrences. No practitioner, therefore, need hesitate as to which method the preference should be given in all practicable cases.

CHAPTER XI.

HYPERTROPHIC ENLARGEMENTS.

Hypertrophy of the lining membrane of the larynx has already been described under the head of plastic laryngitis (q. v.). We shall therefore devote this chapter to such hypertrophic enlargements as are met with in other portions of the air-passages, namely, the pituitary membrane, the tonsils, etc.

1. NASAL HYPERTROPHY.

HYPERTROPHY OF THE TURBINATED BONES.

The turbinated bones sometimes swell up and become more spongy and voluminous than in health, but not to such an extent as to entitle them to be regarded as hypertrophied, in the true sense of that term. On the contrary, the disease referred to is almost entirely limited to the mucous and sub-mucous tissues covering the bones. Sometimes the hypertrophy is general, but more frequently it is confined to the membrane covering the middle and inferior turbinated bones. It is especially situated in the erectile tissue, or stroma, which lies between the periosteum covering the inferior turbinated bones and the mucous membrane bounding the outer walls of the nasal fossæ. In some cases it is so excessive as to totally occlude the posterior nares.

Symptoms.—The rational symptoms are chiefly such as result from nasal obstruction, such as a nasal sound to the voice, defective smell, difficulty of keeping the mouth tightly closed during respiration, especially on rapid exertion, snoring during sleep, and, when excessive, an entire inability to breathe through the nose. In some cases, the senses of smell and hearing become rapidly impaired. When the nasal fossæ are nearly closed, there is apt to be more or less dilatation of the alæ nasi, and also apparent dyspnœa, especially on exertion. Epistaxis is not uncommon, though it does not occur in every case. Masses of inspissated and offensive matter accumulate in the nasal passages, especialy at night, more particularly in

the posterior portions of the nasal fossæ. The amount of air which passes through the nasal openings becomes insufficient for quiet breathing, owing to the approximation of the hypertrophied tissues with each other and with the nasal septum, and hence the dyspnœa and stuffed condition of the nasal passages.

Rhinoscopic Appearances.—Upon making a rhinoscopic examination, we find on one or both sides of the nasal septum, a large mass of reddish tissue, which in some cases almost, if not entirely, fills the opening of the posterior nares. The swelling is attached to the outer and posterior portion of the turbinated bones, and forms a large sessile tumor, of an irregular, wrinkled appearance, lying on the floor of the nares, and projecting somewhat into the upper part of the pharynx. A somewhat similar, but softer and more vascular swelling, frequently springs from the superior turbinated bones, which is often mistaken for mucous polypus (q. v.).

Diagnosis.—These enlargements may be distinguished from mucous nasal polypi, by being of a darker color and sessile. If we examine them with a probe, we shall discover that they are not pedunculated, but that they are broad at the base, and form part of the soft tissues covering the turbinated bones. Moreover, mucous polypi are generally unilateral, whilst hypertrophy of the soft tissues inside the nose is usually bilateral. The same is true of fibrous polypi, though the resemblance in color is much greater in the case of fibrous, than in that of mucous polypi. Another distinction is, that the difficulty of breathing through the affected nostril, when the other nostril is closed by pressure, is not so great in this affection as in the case of polypus, the obstruction in the latter case being complete, while in the former it is only partial.

Treatment.—Various liquid preparations have been recommended by different authors, to be applied in the form of spray to the hypertrophied tissues, but from a somewhat extensive experience in their use, I am unable to recommend them as being to any considerable degree efficient. The most that can be effected by them is a more thorough cleansing of the passages, whereby they are rendered for a time somewhat more pervious, but so far as producing an absorption or atrophy of the diseased tissues is concerned, they are,in my opinion, wholly valueless. The best way of remov-

ing the swelling, except by excision or evulsion, is by cauterization, either by caustics or the electro-cautery; and the best caustic I have found for the purpose is composed of nitrate of silver and lime, the proportions of the ingredients varying according to the intensity of action desired. These substances are formed into flattened pencils, and being attached to a platina holder fastened to a copper wire, so as to be readily bent to any required angle, are rapidly passed, by means of the rhinoscopic mirror, between the turbinated bones and over the affected tissues. The action of the caustic may be readily limited, if necessary, by immediately spraying the parts with a solution of common salt. I have found this compound to be more corrosive and less irritating than the simple nitrate of silver, while at the same time it is safer and more manageable than either chromic or nitric acid, so frequently employed as escharotics in these cases.

But by far the most satisfactory mode of removing these hypertrophic enlargements, is by means of Gibb's or Jarvis' wire loop ecraseur, (Pl. vi, Fig. 5) which is simply a stout slender tube or canula, through which are passed the two ends of a fine annealed wire, or what is better a No. 5 piano wire, leaving a loop of suitable dimensions to be passed over the hypertrophied membrane. The proximal ends of the wire are either fastened to a button, worked like a tourniquet, or attached to a screw at the other extremity of the canula; by turning the screw, or button, the wire is shortened and the loop contracted. The instrument is slender enough to be passed through the nostril, and after it has reached the end of the turbinated bone, if there is any difficulty in passing the snare over the enlargement, the mirror, aided by the finger, may be made use of for its adjustment. After the mass has become engaged in the snare, the loop should be gradually tightened until the adventitious growth is entirely cut through. The operation should be performed slowly, in order to avoid troublesome hemorrhage. In some cases, adjustable scissors (Pl. vi, Fig. 1) or curved forceps (Fig. 6) may be used for detaching a portion of the mass, but only when more than usually accessible.

2.—ELONGATION OF THE UVULA.

In many cases of inflammation in and about the throat, especially inflammation of a chronic character, the uvula participates to

such an extent as to be greatly increased in size, either from hypertrophy or relaxation of the mucous membrane covering it, or from a hypertrophic condition of the muscular tissue itself. When actually inflamed, it is red and swollen or pale and œdematous, but when simply relaxed it is translucent and greatly elongated. In this condition it often hangs down into the pharynx so as to irritate the epiglottis and neighboring parts, giving rise to a tickling or spasmodic cough, which, unless relieved by local or constitutional treatment, can only be remedied by the removal of the hypertrophied tissue. But amputation of the uvula is rarely, if ever, required, unless the symptoms are due to a true hypertrophy of the organ, as the acute form is associated with acute pharyngitis, and generally disappears as soon as the affection on which it depends subsides.

Treatment.—In the acute form of the affection, to which we have just referred, the use of mild astringent sprays and gargles, with the internal administration of Belladonna, Mercurius, Nux vomica and other indicated remedies, is all that will generally be required. The true hypertrophied or elongated uvula, on the other hand, will generally require to be amputated, to the extent, at least, of removing the redundant tissue. This is easily effected by seizing the organ with a pair of long slender forceps, drawing it forward, and removing the redundant portion with a pair of ordinary scissors. Various instruments, as the vulsellum uvula scissors, (Pl. vii, Fig. 3), the uvulatome, etc., have been devised for the purpose of facilitating its removal, but, owing to the spontaneous retraction of the palate, they are found to be less certain and convenient than the simple forceps and scissors. In performing the operation, care should be taken not to remove the entire organ, but only the redundant portion, as a certain amount of projection is required to prevent the escape of fluids into the nasal cavity during the act of swallowing.

3—HYPERTROPHY OF THE TONSILS.

By hypertrophy of the tonsils is meant a permanent enlargement of these organs, in consequence of chronic inflammation, or of interstitial deposition resulting from strumous or other morbid conditions of the system.

Symptoms.—The symptoms of enlarged tonsils are such, that we can often predict their existence before any examination is made of the fauces; certain peculiarities of physiognomy, constituting

what is called the facial expression of children afflicted with tonsillar hypertrophy, being almost always present. This expression is difficult to describe, but consists chiefly in a listless appearance of the countenance, drooping eyelids, half-open mouth, and especially a thick, half-muffled sound of the voice—symptoms usually resulting partly from the local trouble, and partly from the profound impression made by the disease, of which the hypertrophy is at once the expression and the cause.

On examining the fauces, we discover the enlarged tonsils encroaching upon the cavity of the pharynx, and sometimes concealing its posterior wall from view. If the enlargement is but moderate, the symptoms are usually not very prominent, and may fail to attract attention. But if a greater degree of hypertrophy exists, the symptoms already enumerated will be likely to become manifest, especially the half-muffled sound of the voice, which scarcely ever fails of recognition. Snoring is another prominent symptom in these cases. Owing to the obstruction to breathing, the patient generally sleeps with his mouth open, and respiration being accomplished through both the nose and mouth, the soft palate and uvula are thrown into a state of vibration, producing the sound in question. Nightmare is also of frequent occurrence in this affection. Dr. Haward accounts for this symptom by referring it to a less perfect aeration of the blood during sleep than during the waking hours, thus producing cerebral congestion and consequent disturbance of function. A peculiarity of this form of nightmare, is said to be its tendency to recur several times the same night, whereas other forms of nightmare are generally limited to a single attack. Deglutition is more or less impeded, and occasionally there is difficulty in moving the jaws. Catarrhal attacks are frequent, there being a constant tendency to take cold on the slightest exposure. But the most striking symptom, in many cases, is a peculiar deformity of the chest, first pointed out by Dupuytren, and which he regarded as the direct result of the hypertrophy. It consists in a lateral compression of the chest walls, whereby the sternum is thrust forward in such a manner as to give rise to the condition called pigeon-breasted. This naturally suggests a softened or rachitic state of the bones; and as the characteristic malformation consists in a circular depression of the chest walls at about the junction of the lower and

middle third, corresponding with the attachment of the diaphragm internally to the osseus framework, we can easily understand how a constant struggle of this muscle to overcome the obstacle to free respiration may result in such malformation.

The evil effects of enlarged tonsils on the general health, have been clearly pointed out by M. Chassaignac. Notwithstanding the increased efforts of the diaphragm to overcome the impediment to respiration, the oxygenation of the blood is very imperfectly performed, and as a consequence the vital power is depressed, the functions of secretion, excretion and nutrition are impaired, the brain is oppressed, the digestive organs are disturbed,and the patient lives in a state of permanent ill-health.

Spasm of the glottis frequently occurs in this disease, and is probably due to the poisonous effect of the imperfectly aerated blood upon the nerve-centres. Impaired hearing, with tinnitus aurium, is also a common symptom, due partly to the catarrhal condition associated with the disease, and partly to pressure on the orifice of the Eustachian tube.

Pathology.—The latest investigations on the subject go to prove that there are two varieties of enlarged tonsils, the hyperplastic and the hypertrophic. The former depends on growth and proliferation of the connective-tissue elements of the gland, while the latter is due to hypertrophy and distention of the follicles, or true glandular tissue of the organ, Both conditions are generally associated, the tonsils presenting different appearances according as the epithelial or connective-tissue elements predominate. In the former case,the tonsil is rough, irregular and nodulated; the gland is soft and friable; and the follicles are distended with a viscid mucus, which can generally be easily pressed out or wiped away, but which in some cases is thick and caseous. When, on the other hand, the connective-tissue elements are in excess, the gland is smooth and round, soft and compressible in the earlier stages, but firm and elastic in the more advanced stage. Owing to compression, the follicles become atrophied and their functions cease; hence no secretion can be pressed out of them. The hypertrophic form is chiefly confined to adults; the hyperplastic is mostly met with in children, and usually disappears during adult life.

Prognosis.—We have already pointed out the evil effects of

this disease upon children, and have only to add, that unless the morbid state is soon remedied it may leave the most permanent and serious effects upon the constitution. When the disease sets in at a later period, the general health of the patient is not likely to suffer from it to any great extent, and the chief inconvenience arises from the unnatural fullness in the fauces, and from a constant disposition to hawk and spit excited by it. Sometimes, however, it proves troublesome in adult life, by keeping up a state of congestion in the neighboring parts, which leads to frequent attacks of catarrhal inflammation. As a general rule, however, the tonsils lessen in size after the age of manhood is fully reached, and as they diminish the troublesome symptoms gradually disappear.

TREATMENT.—The treatment is three-fold—local, constitutional and operative. The LOCAL TREATMENT consists in the application of such remedies as tend to promote *absorption*, such as iodine, iodide of potassium, etc.; *astringent remedies*, such as tannin, perchloride or persulphate of iron, etc.; *escharotics*, the use of which is too painful and tedious to justify their employment in these cases; and the various *specific remedies*, the internal administration of which should go hand in hand with their local application. One of the best astringent applications is a saturated solution of tannin, which should be applied two or three times a day over the whole gland. Of the remedies designed to promote absorption, the compound solution of iodine and the iodide of potassium, of the old-school, is much the best, as the iodine is in a form to be rapidly absorbed.

CONSTITUTIONAL TREATMENT.—The constitutonal remedies which have proved most beneficial in this disease, are: Baryta iod., Bromine, Conium, Ferrum iod., Guaiacum, Iodine, Kali iod., Oleum jec. asel., Phytolacca, Spongia, Stillingia. Of these, Baryta and Iodine have long been known to exercise a marked effect in the reduction of glandular enlargements, especially of the tonsils. Hale says of their combination in the form of Baryta iod.: "Several years ago, it occurred to me that the chemical union of Iodine and Baryta would form a medicine whose effects would be just what we desire in the treatment of cases of glandular enlargement with a tendency to induration. I therefore procured some freshly prepared Iodide of Baryta, and prescribed it in hypertrophy of the tonsils. The result was very gratifying. It effected a rapid dimi-

nution in the size of the glands, even when they had been indurated for some years."

Operative Treatment.—If local and constitutional treatment should fail to cause a satisfactory shrinkage of the enlarged glands, resort should be had to the knife, instead of to caustics, as the operation of excision is attended by very little pain, and is simple, speedy, and easily accomplished; while their removal by caustic is the very reverse of this. Unless there exists some good reason for delaying the operation, such as an inflammatory state of the fauces, the operation should be proceeded with immediately, as the sooner it is done the sooner will the child's system recover from the evil effects already entailed by the disease. No previous preparation of the system is required; and as regards the dangers of the operation they are comparatively trifling. The only one worth alluding to is hemorrhage, and this has been greatly exaggerated. If the tonsillar artery happens to be cut, which is a very rare occurrence, and one that I have never known to occur when the tonsillitome was employed, it is only necessary to apply torsion to the bleeding vessel to arrest the hemorrhage at once.

The operation may be most conveniently performed with a tonsillotome, of which Fahnestock's (Pl. VII, Fig. 2) is one of the best, or a common probe-pointed bistoury may be used. In the latter case, the tonsil should be grasped with a pair of long forceps, or what is better, a vulsellum, which is simply a pair of forceps with hooked teeth, for the purpose of holding the tonsil securely, and at the same time putting it on the stretch, and then rapidly carrying the blade of a long curved bistoury behind the mass, with the cutting edge parallel with its base, and then quickly but carefully excising it. This method, however, is necessarily somewhat difficult and clumsy, since it not only requires that the operator should be ambidextrous, in order to operate with facility on either tonsil, but calls for the services of four hands; one for the bistoury, one for the forceps, one for the tongue depressor, and one for steadying the head of the patient. Besides, there is always more or less danger, during the struggles of the patient, that some of the neighboring parts, such as the pillars of the fauces, may be cut, or that the carotid artery itself may be opened—accidents that cannot possibly occur when the tonsillotome is employed. Hence, most surgeons now

prefer to operate with this simple and very convenient instrument, the use of which renders the operation extremely easy and expeditious. This instrument is now so constructed, that the tonsil is not only readily seized by the sliding stylet or fork, but is drawn through the fenestrum by it, and when thus raised from its bed, the knife is drawn home, leaving the amputated tonsil on the fork of the tonsillotome. No after-treatment is generally required, but the patient will need to live upon milk and other nutritious fluids until the throat is healed.

CHAPTER XII.

STENOSIS, TRACHEOCELE, FOREIGN BODIES.

In the previous portions of this work, we have endeavored to embrace nearly everything pertaining to our subject which is of special value to the general practitioner; but there are a few subjects not yet discussed which may be of interest to the classes for whom this work is written, and these we propose to consider in the present chapter.

1—STENOSIS OF THE LARYNX.

By stenosis of the larynx is meant any diminution of the cavity of that organ resulting from mucous or sub-mucous infiltration or from cicatricial contractions. It does not include the lessening of calibre arising from pressure, nor from the presence of cancer, fibroid tumors, etc. It is, rather, a condition similar to that known as stricture, being a narrowing of the cavity of the larynx due to interstitial deposits in the deep layers of the lining membrane, such as is met with in chronic syphilitic laryngitis (q. v.), and the cicatricial contraction which follows syphilitic ulceration (q. v.).

The symptoms of laryngeal stenosis, aside from those caused by the primary disease, are all included under the term dyspnœa. As the disease progresses, the difficulty of breathing, which at first, and even for a considerable period, is scarcely perceptible, becomes more and more pronounced, until at last it is so prominent as to demand tracheotomy for its relief, unless the obstruction can be overcome in some other way. As a general rule, medical treatment is of but little, if any, benefit in these cases, particularly when the stenosis depends on the cicatricial contractions of syphilis, or even on the tertiary form of the complaint. Hence it becomes necessary sooner or

later to open the trachea, an operation required, not only for the immediate relief of dyspnœa, but as a prerequsite to further

TREATMENT.—This consists in gradual dilatation by means of hollow tubes or bougies, as in cases of urethral stricture; forcible dilatation by means of laryngeal and tracheal dilators, such as Elsberg's (Pl. vii, Fig. 4), and cutting dilatation, which is a combination of the last method with that of incision, as in the operation of urethrotomy.

Dilating tubes were first employed by Prof. Schroetter, of Vienna. He first made use of curved vulcanite tubes, of various sizes, but found that although hollow, they set up so much pharyngeal irritation that they could not be tolerated longer than a few seconds at a time. This led him to invent what is called the *laryngeal dilating plug*, which is made of lead, and introduced into the larynx by means of a hollow, curved tube and a piece of cord. One end of the cord is securely fastened to the plug, and the other is passed through the curved tube which serves as a handle for the introduction of the plug. The instrument is now ready for use; but previous to its being placed in the larynx, it is necessary that a tracheal tube, with an opening in its upper side, for the admisson of the lower end of the plug, should be worn. The plug is passed into the larynx by means of the curved tube, and after its lower extremity is fitted to the opening in the upper side of the tracheal canula, and properly secured there by means of a bolt or pin attached to the inner canula of the tracheal tube, the curved tube which has served as a director for placing the plug in the larynx is withdrawn, leaving the plug *in situ*, and the cord hanging out of the mouth. The cord is readily secured by tying it around the neck or ear. When it is desired to remove the instrument, the bolt is withdrawn, and the plug is lifted from the larynx by means of the cord. The plug should be allowed to remain in the larynx as long as it can be borne without too much inconvenience, which will probably not exceed one or two hours at first; but after the parts have become accustomed to its presence it may be retained for a much longer period.

Although this method of dilatation is necessarily a slow one, it has the advantage over forcible dilatation of leaving the parts in a more natural condition, and of being more permanent in its beneficial effects.

2—TRACHEOCELE.

Tracheocele is a tumor situated over the trachea, and communicating with its interior by a small orifice. The tumor, which is sometimes unilateral and sometimes bilateral, is filled with air, and varies in size according as respiration is natural or forced. In one case the neck measured 40.5 centimetres in circumference in ordinary respiration, whilst in forced respiration it measured 49 centimetres (*Eldridge*). In this case, on making a fine opening into the tumor with a needle, air escaped with sufficient force to extinguish a lighted match. In another case, the tumor was tympanitic on percussion (*Fancon*). Dyspnœa is so rare that when present it can hardly be regarded in any other light than as an accidental complication. Mackenzie thinks, however, that it may possibly be due to the compression which the distended tumor exerts on the trachea when the tracheocele is pressed on by the sterno-cleido-mastoideus muscle. The voice is generally but slightly altered, being for the most part simply weak, but in one case, reported by Daralz, each syllable was accompanied with a soft whispering murmur.

Causes.—Tracheocele is a very rare affection; nevertheless, more than a dozen cases are on record. Some cases are congenital but more frequently the tumor appears to be caused by some act of straining, such as violent coughing, vomiting, etc.

Diagnosis.—The location and varying size of the tumor, its diminution under pressure, its increase on forced inspiration, and the impulse on coughing, are symptoms so clear as to render an error in diagnosis well-nigh impossible.

Treatment.—Mackenzie simply recommends some mechanical appliance for preventing the distension and progressive development of the tumor, and probably that is all that would be advisable for the practitioner to attempt to accomplish in these cases.

3.—FOREIGN BODIES IN THE AIR-PASSAGES.

1. In the Nose.—Children are so in the habit of stuffing their nostrils with buttons, beans, and other like objects, that their removal becomes a matter of almost daily occurrence. If not beyond the reach of a hair-pin, which is one of the handiest and safest instruments for the purpose, one of the following expedients will be likely to prove successful. (1) *Wash out the foreign substance by injecting water into the opposite nostril.* Almost any syringe will answer the purpose, provided care is taken to prevent regurgitation of the liquid, by closing the free nostril tightly around the nozzle of the instrument, and then throwing a steady, forcible stream behind the foreign body. (2) *Close the free nostril with the finger, and then blow forcibly into the mouth of the patient.* In this manner I recently succeeded in quickly removing a button from the nostril of a child, after it had been fruitlessly fished for with instruments. (3) *Give an emetic, and when it begins to operate, close firmly the mouth of the patient.* This is generally a very successful way of removing foreign bodies from the nostrils, but is too disagreeable a mode to resort to unless other methods fail.

2. In the Tonsils.—Concretions and calculi occasionally form in the follicles and lacunæ of the tonsils, some of which attain the size of a cherry or filbert. Sometimes they are discharged spontaneously, but in most cases they give rise to ulceration, and occasionally to abscesses, the suppurative process continuing until after the extraction of the calculi. The treatment consists in removing the concretions with forceps, as soon as their presence is clearly recognized. If the calculi are numerous, or the glands much hypertrophied, it will generally be advisable to remove the tonsils themselves.

3. In the Pharynx.—The pharynx is not only the most common place of lodgement for foreign bodies, but, next to the larynx and lower air-passages, the most important. Food is particularly

apt to lodge there, especially lumps of meat, apples, potatoes, etc. In addition to these substances, we frequently meet with fish-bones, nut-shells, needles, pins, false teeth, coins, buttons, fish-hooks, and indeed almost every object that a child can get into its mouth. Some of the objects, such as pieces of meat, frequently cause suffocation, by obstructing the entrance to the larynx. Bones and other hard substances are liable to cause ulceration or abscess of the larynx; and in all cases, unless speedily removed, they set up more or less inflammation, with its accompanying irritation and swelling. Deglution is always interfered with, and in some cases is almost impossible. Hemorrhage, and even death, may arise from the perforation of a large blood-vessel, such as the carotid artery, and this too from such a trifling article as a pin or needle. In most cases the object can be readily seen, or felt with the finger; if not, the cavity of the larnyx should be explored by the aid of a laryngeal mirror.

Most objects can be readily removed from the pharynx with the fingers, or with curved forceps (Pl. vi, Fig. 6), or else with the bristle probang (Pl. vii, Fig. 1), which is often one of the handiest instruments we have for removing foreign bodies from the throat. Soft substances, such as pieces of meat, if not readily seized with the fingers or forceps, may be pushed down into the œsophagus with the probang. Fish-bones, needles, and other like bodies, entangled in the folds of mucous membrane, or lying cross-wise in the pharynx, should if possible be seized near one of their extremities, so as not only to be liberated more easily from the parts in which they are fixed, but removed without unnecessary laceration of the tissues.

Much harm is sometimes done in these cases for want of sufficient care and judgement on the part of the practitioner. Mackenzie very properly says: "When summoned to a patient who is almost suffocated, it may not be possible to make a thorough exploration of the throat, and tracheotomy may be immediately necessary. The common, but fatal, practice is to at once use a probang, and to force the obstructing object onward. A foreign body, comparatively harmless in the pharynx, is thus often driven into the larynx or even into the bronchi, or may become impacted in the œsophagus. At the same time great injury is often done to the soft parts. If the patient's respiration could support a probang, an inspection could cer-

tainly be made; but if he appear to be dying of apnœa, tracheotomy may be necessary before the extraction of the foreign body can be accomplished." When no foreign substance can be detected after careful examination, it is advisable, even though the patient's sensations lead him to believe that the cause of his trouble is not removed, to wait for some little time before subjecting him to further manipulation. For the sensations of the patient are often unreliable, and although the foreign substance may have been extracted, a feeling of heat, pricking, or constriction in the pharynx, may be experienced for some time afterward. Such sensations deceive the sufferers by simulating the presence of some offending substance. By leaving the parts at rest, if there be any foreign body in the pharynx, it will often work its way out, and be swallowed, or ejected by the mouth, or it can be subsequently removed.

4. In the Larynx.—It is unnecessary to enumerate the objects that have, at one time or another, found their way into the larynx, as they comprise portions of almost every known substance. As to the frequency in which foreign bodies have become fixed in different parts of the air-passages, Bourdillat, who made an analysis of one hundred and sixty-six cases, found that the foreign body was arrested in the trachea in eighty instances, in the larynx in thirty-five, in the right bronchus in twenty-six, and in the left bronchus in fifteen. Other observers, however, have found the most frequent site to be the larynx.

If the object is large enough to fill the opening where it is located, immediate death by apnœa is to be apprehended, unless the foreign body is instantly dislodged. In other cases, more or less dyspnœa will result, according to the amount of obstruction the body causes to free respiration. Unless impacted, the body is liable, by changing its position, to interfere more and more with respiration, and sometimes death results from this cause. Or it may prove fatal indirectly by setting up inflammation, and thus cause such a tumefaction of the parts as to produce suffocation. Again, it may cause such a degree of irritation as to excite spasm of the glottis. We cannot be too guarded, therefore, in our prognosis, whether there appears to be much dyspnœa at the time or not.

Whenever practicable, a laryngoscopic examination should be

made, and the object removed with the laryngeal forceps (Pl. vi, Fig. 6). If, however, respiration is completely obstructed, or death by asphyxia appear imminent, no time should be lost in opening the trachea, after which the foreign body may be sought for and removed, as just directed. A common practice in these cases, and one which has repeatedly proven successful, is to turn the patient head downward, and if the foreign body is round and smooth, like a coin or bullet, it will sometimes fall out of its own weight. The tracheal tube should not be removed, nor the opening closed, until the inflammation and tumefaction have subsided, and the patient is able to breathe freely *per vias naturales*.

5. In the Trachea and Bronchi.—As foreign bodies in the trachea and bronchi gain access to those parts through the larynx, they are generally small, such as grains of corn, fruit-seeds, beads, etc. Sometimes, however, such objects as pins, needles, and other sharp bodies gradually work their way into these parts, or are forced into them by accident. When lodged in the trachea, the results are similar to those described above for the larynx; but when the object passes into one of the bronchi, the obstruction to respiration is necessarily limited to the lung to which the subdivisions of the implicated bronchus are distributed. Owing to the "bronchial spur" deviating somewhat to the left of the median line, it is found that foreign bodies pass nearly twice as frequently into the right bronchus as into the left. The negative evidence furnished by laryngoscopy, together with the history of the case, and the presence or absence of the respiratory murmur upon one or both sides of the chest, are generally sufficient to determine the location of the body. The prognosis is in all cases extremely serious, though numerous instance have occurred where objects have become encapsuled, and have been expectorated after the lapse of many years. Such cases, however, are comparatively rare, and if the foreign body does not cause death by suffocation, it is likely to induce organic disease of the respiratory organs, and thus gradually lead to a fatal termination.

If a coin, or other smooth body, has slipped through the larynx into the trachea, or into one of its branches, the patient should at once be placed in an inverted position, with the head downward, and if necessary well shaken, in order that, as has occasionally hap-

pened, the foreign body may fall out by its own gravity. If this does not occur, and the symptoms are very urgent, tracheotomy should be at once performed. The sides of the wound should be kept well separated, so as to favor the expulsion of the object through the opening by coughing. If this does not soon occur, an attempt should be made to remove it with forceps.* If this fails, Mackenzie's advice, to stitch the edges of the tracheal wound to the sides of the neck on each side,and,for obvious reasons,to dispense with the use of a canula, should be followed. A tracheal mirror should then be passed into the opening, and a careful examination made, not only with a view to locating the foreign body, but to removing it. If still unsuccessful, the patient should be placed in a supine position, head downward, on an inclined plane, so as to favor the exit of the body by coughing and by the action of gravity.

*Erichsen and others say no such attempt should be made; that the uncertainty and danger attending it are too great to render the proceeding at all safe.

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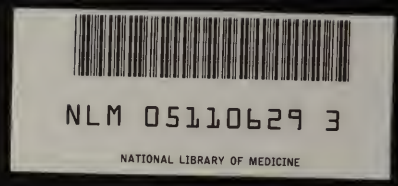
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